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IRACH JEHANGIR SORABJI TARAPOREWALA MEMORIAL VOLUME

Completed on the Occasion of the
First Anniversary of his Death
(15th January, 1957)

BY
Members of the Faculty of
the Schools of Linguistics
Deccan College, Poona
Jointly with
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1957

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IN MEMORIAM

IRACH J. S. TARAPOREWALA

Born 22nd July 1884] [Died 15th January, 1956

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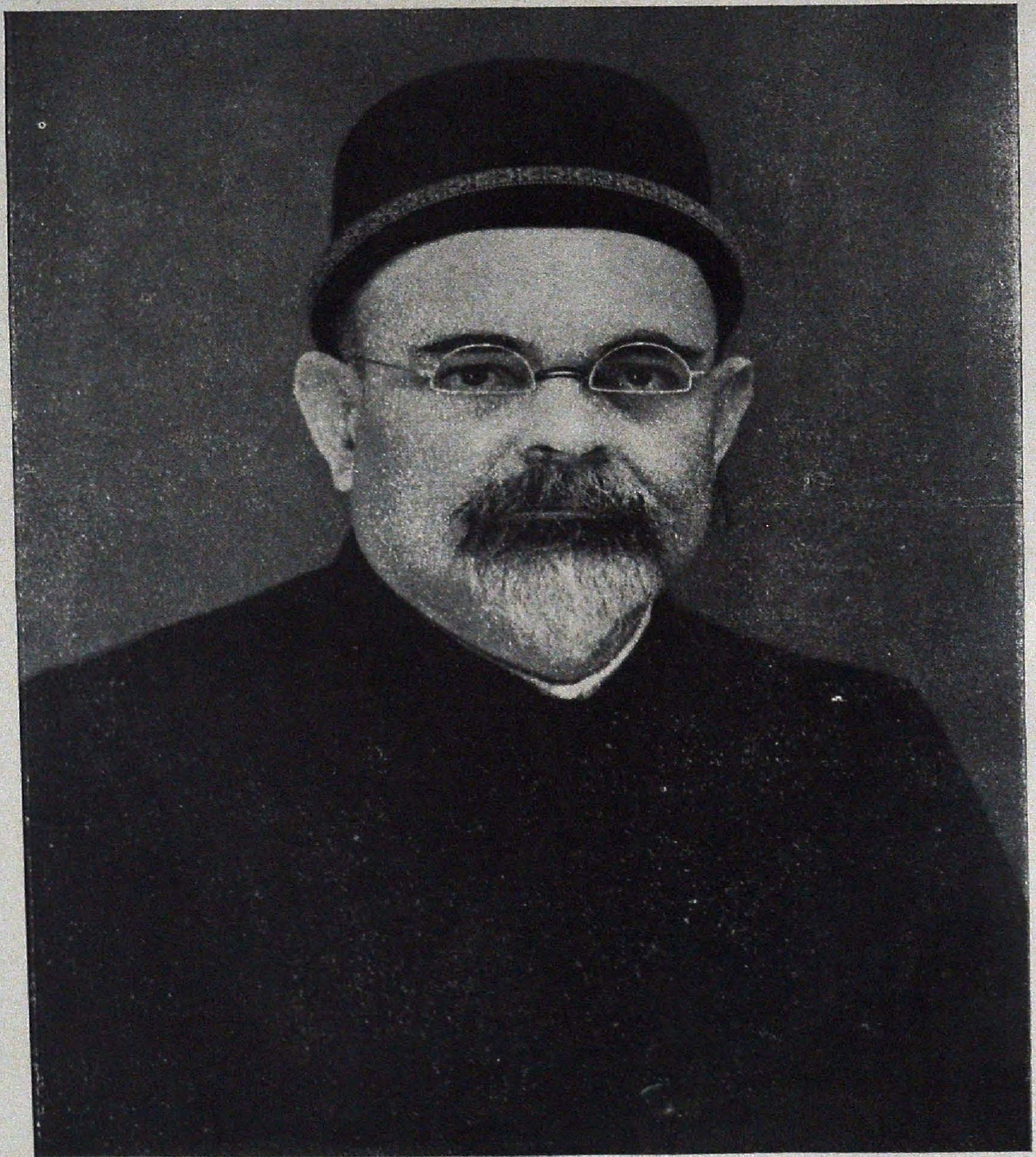

Dr. I. J. S. TARAPOREWALA

Born: 22nd July, 1884] [Died: 15th January, 1956

IN MEMORIAM

IRACH JEHANGIR SORABJI TARAPOREWALA

Dr. I. J. S. TARAPOREWALA, the doyen of Linguisticians in India, passed away in Bombay on January 15, 1956. He was born on the 22nd July 1884, at Haiderabad (Deccan) where his father Jehangir Sorabji TARAPOREWALA was the Superintendent, Central Treasury of the Government of the Nizam of Haiderabad. Young TARAPOREWALA matriculated in 1898 from Bhadra New High School, Bombay, and graduated from Elphinstone College, Bombay, in 1903 with Honours in English and Sanskrit. He went to England and joined Grey's Inn, London, in April 1904, and was called to the Bar in January 1909. He spent his vacations in France and Germany to study French and German. On his return to India he was appointed Professor of English at Central Hindu College, Banaras. In 1911 he was awarded a Government of India scholarship for scientific study of Sanskrit in Europe. He went to Cambridge and was admitted into Fitzwilliam Hall (October 1911). He took his B.A. degree there. Then he joined Wurzburg University and took the PH.D. degree in July 1913. At Cambridge he read Sanskrit, Comparative Philology, Arabic and Persian under Professor E. RAPSON and Dr. P. GILES, Professor NICHOLSON and Professor E. G. BROWNE, respectively. At Wurzburg he studied Avesta (under Professor C. BARTHALOMAE), and Sanskrit under Professor Julius JOLLY, and Science of Education. He obtained the doctorate degree "summa cum Laude" on the thesis "Some Notes on the Adhyakṣapracāra (Book on Kauṭilya's Arthaśāstra)."

On his return from his second visit to Europe Dr. TARAPOREWALA was appointed Headmaster at Central Hindu Collegiate School, Banaras. In September 1917 he joined the University of Calcutta as University Professor of Comparative Philology. Beside his duties as Professor and Head of the Department of Comparative Philology he held classes also in Sanskrit, Persian, Gujarati and German. He introduced the study of Avestan at the University by revising the M.A. Course in Comparative Philology. For three years (1927-29) he delivered lectures as Visiting Professor of Iranian Studies at Visvabharati, Santiniketan. In January 1930 he joined as Principal, M. F. Cama Atharvan Institute, Andheri, (Bombay). After his retirement from this post in May 1940 he was appointed Director, Deccan College Postgraduate and Research Institute, Poona, and he held this post till 31st October 1942.

In October 1955, Dr. TARAPOREWALA went to Iran as Professor of Sanskrit and Indology at Tehran University. But he soon fell ill and had to be brought back to India (November 1955).

Dr. TARAPOREWALA was a learned man but his learning sat very lightly on him. His amiable disposition blended with culture and learning made him dear to his pupils and friends. As a leading Linguistician in India he was connected with several Universities in this country as an examiner or as advisor. He knew several languages, Indian and European, modern and classical. He was a founder-member of Linguistic Society of India and was elected its President several times, first in 1929. He was also elected at various sessions of All-India Oriental Conference as a Sectional President.

Among his other academical activities the following may be mentioned.

1914 : Lectures on Comparative Philology, Bombay University.

1928: Lectures on History of Zoroastrianism, Kama Oriental Institute, Bombay.

1937 : Wilson Philological Lectures, Bombay University.

1955 : Lectures on Avesta, Summer School of Linguistics, Poona.

The more important contributions by Dr. TARAPOREWALA include the following :

1. Some Notes on the Adhyakṣa Pracāra (PH.D. thesis).
2. *Selections from Avesta and Old Persian,* Part I, Calcutta University, 1922.
3. *Selections from Classical Gujarati Literature* (in three Volumes), Calcutta University.
4. *Elements of the Science of Language,* Calcutta University, Second Edition, 1951.
5. History of the Parsis in India (contributed to *Cambridge History of India,* Vol. II).
6. The Religion of Zarathushtra, Adyar, Madras, 1926.
7. The Future of Linguistic Studies in India (Presidential Address, Philological Section, Second Oriental Conference).
8. Some Aspects of the History of Zoroastrianism (Government Fellowship Lectures at K. R. Kama Oriental Institute, 1927).
9. Inaugural Address of the Linguistic Society of India (Lahore 1928).
10. The Indo-European Homeland (Presidential Address, Philological Section, Sixth Oriental Conference).

11. *Gatha Ahunavaiti* (An English Rendering), Bombay, 1944.
12. Some Aspects of Iranian Studies in India (Presidential Address, Iranian Section, Seventh Oriental Conference).
13. *The Gathas of Zarathushtra*, Bombay, 1
14. *The Divine Songs of Zarathushtra*, Bombay, 1951.
15. Linguistics in India (Indian Linguistics, Chatterji Commemoration Volume, 1955).

7th March, 1957 Sukumar SEN

RECIPROCAL INSTRUMENTAL IN BENGALI

By

SUKUMAR SEN, *Calcutta*

The idiom of the reciprocal instrumental is unknown in Old Indo-Aryan and not attested in Middle Indo-Aryan so far as I know. There is, however, sporadic occurrence of the idiom in late Sanskrit which may have come from the spoken language. For instance: *adya yuddhaṃ tvayā mayā* 'today there will be a fight between you and me'.

Bengali, however, shows this idiom although no grammarian of the language has taken note of it. Professor S. K. CHATTERJI in his *Bhāṣā-prakāś Bāṅgālā Vyākaraṇ*, the most detailed grammar of the language, however, notices an idiom of the reciprocal agent case in modern Bengali; e.g. *bāp-beṭāy jhagaṛā karche* 'the father and the son are quarreling'. But in the historical idiom of the language this sentence should better be *bāpe beṭāy jhagaṛā hocche* 'a quarrel is going on between the father and the son'. In grammatical analysis of the first sentence the nominative of the verb *karche* is *bāp-beṭāy* which forms a dvandva compound as it were. In the second sentence the nominative is *jhagaṛā* and *bāpe beṭāy* are in the instrumental case implying reciprocity. To show that this idiom of the reciprocal instrumental is a regular and historical idiom in Bengali I quote some additional instances.

māye jhiye jhagaṛā 'quarrel between a mother and her daughter' (nursery rhyme).

core kāmāre dekhā nāi 'there is no meeting between a burglar and the smith (that makes implements for him)' (proverb).

tomāy āmāy dekhā holo 'a meeting happened between you and me' (TAGORE).

ebār vīṇā tomāy āmāy āmarā ekā 'now, my lute between you and me we are alone' (TAGORE). This is a very interesting construction where the reciprocal instrumentals are in apposition to the nominative plural *āmarā*.

jale sthale kānākāni 'there is a whispering talk between the waters and the land' (TAGORE).

The last example leads to the iterative variety of the reciprocal instrumental. Thus: *kāne kāne kathā* 'whispering talk'; literally, 'a talk between

ear and ear'; *galāy galāy bhāv* 'very close friendship'; literally, a friendship where the persons hold one another's neck. This idiom is also connected with such reciprocal and iterative compounds in Bengali as *galāgali* 'close (friendship)', *kānākāni* 'whispering'; *hātāhāti* 'scuffle'; and Sanskrit (adverb) *keśākeśi*, etc.

The first instrumental of the two reciprocal forms has lost the ending and therefore has appeared as the nominative and as a result we find the modern construction as noted by Professor Chatterji. The intermediate stage of this change is supplied by such instances as the following:

gāi bāchure bhāv thākle bane giye dudh dey 'if the cow and her calf have an understanding the milk is supplied (by the former to the latter) in the woods'.

bhāi bone mukh dekhādekhi nāi 'the brother and the sister do not meet each other'.

In these two instances the first instrumentals were originally *gāie* and *bhāie*. The normal phonological change is responsible for the apparent nominative forms.

NOTES ON THE PHONOLOGY OF MUNDARI

By

John J. Gumperz, Berkeley, *California*
In collaboration with H. S. Biligiri

0. Mundari, which is one of the Munda or Kolarian languages, is spoken by about half a million speakers over a large area in Southern Bihar and Northern Orissa. It is one of a large group of closely related Munda languages, including Santhali, Ho, and several others which are referred to by the name Kherwari by Grierson.[1] The present analysis is based on the speech of one informant, a native of Mongolpur, P.O. Onorda, District Mayurbhanj, Orissa, a teacher with the Orissa Government Tribal Welfare Department, who is bilingual in Mundari and Oriya, and who also speaks Hindi and English.[2] The dialect recorded here shows very close resemblance to the Bhumij described in the *Linguistic Survey of India,* which, as Grierson himself states, is almost identical with Mundari. The informant himself refers to his speech as Mundari.

1. Sir George A. Grierson, *Linguistic Survey of India,* Vol. IV, Calcutta, 1906. Other literature dealing with Mundari includes:

J. Hoffmann, *Mundari Grammar,* Calcutta, 1903.

P. O. Bodding, *Materials for a Santali Grammar,* Benagaria, 1929, deals with a closely related language.

2. The bulk of the material for the analysis was collected in the course of the seminars in Linguistic Field Methods at the second and third Schools of Linguistics, at Deccan College, Poona, in the summer and fall, 1956.

Thanks are due to Professor S. M. Katre, Director of Deccan College, for defraying the special costs of the seminar; to the Government of Orissa Tribal Welfare Department for lending the services of the informant; and to Mr. Phillip Barker for reading the manuscript and providing helpful comments based on his own fieldwork with Korwa, a related language.

The analysis is based on a text of about 1200 items. This is, of course, not enough for a complete description, and the conclusions presented here will have to be tested with a much larger body of data before they can be accepted as definite.

1. The dialect has the following phonemes:

Vowels

i, e, a, o, u.

Consonants

	Labial	Dental	Alveolar	Cacuminal	Palatal	Velar	Glottal
Stop ..	p, b	t, d		ṭ, ḍ		k, g	
Affricate ..					c, j		
Trill ..			r				
Lateral ..		l		ḷ			
Nasal ..	m	n		ṇ			
Spirant ..			s				h

Juncture, (represented by space).

1.1. Normal Vowel Values.[3] /i/ indicates a lower high front vowel: [i], e.g. /ipil/ 'star'; /bir/ 'jungle'. /e/ indicates a mean mid front vowel: [E], e.g. /seta/ 'dog'; /gel/ 'ten'. /a/ represents a fronted low central vowel: [a<], e.g. /daṭa/ 'tooth'; /san/ 'firewood'. /o/ indicates a mean mid back vowel [Ω]; e.g. /coke/ 'frog'; /hon/ 'child'. /u/ stands for a lower high back vowel: [u], e.g. /kumbal/ 'hut'; /kul/ 'send'.[4] Back vowels are rounded; all others are unrounded. The normal articulation of all vowels is fairly tense. The tongue position of /i/ and /u/ is slightly lower than that indicated by the corresponding short vowel phonemes in Standard Hindi. /e, o/ are considerably lower than Hindi /e:/ and /o:/. The tongue position of /a/ is similar to that of Hindi /a:/.

1.2. Positional Allophonic Variants. The following variations in vowel quality occur: Before retroflex consonants, front vowels and /a/ are retracted and retroflex, back vowels are retroflex, e.g. /peḷa/ 'friend'; /gaḍa/ 'river'; /goṇa/ 'cow shed'. Before final unaspirated stops (i.e. the phonetic glottal stop and phonetically glottalized stops), vowels are tenser than normal, /i/ and /e/ are retracted, /u/ and /o/ are fronted and less rounded than normal, e.g. /dek/ 'climb'; /kulit/ 'kite (bird)'; /ut/ 'mushroom'; /losot/

3. The terminology and phonetic symbols used are those given in BLOCH and TRAGER, *Outline of Linguistic Analysis*, Linguistic Society of America, Baltimore, 1942. The phonetic symbols are not intended to give accurate indications of the position of the respective vowels and consonants. They represent rather the center of a range of free variant allophones. The actual vowel values can be imagined to cluster around these centers in the way shots directed at a target cluster around the bulls-eye.

4. All forms with verbal glosses are quoted in the root form.

'mud'. In initial position all vowels are preceded by a slight glottal constriction.

In addition /a/ has a number of other allophones. Before intervocalic (non-syllabic) /i/, after /h/ before /r/, and before /rh/, /a/ is raised and centralized: /taian/ 'crocodile'; /jharka/ 'window'; /barha/ 'wild pig'. /a/ is fronted before and after /r/: /taran/ 'shoulder'. /a/ is slightly higher and more retracted after the labialized allophone of /b/ or /p/ (see 2.2.): /duba/ 'can'; /kuba/ 'hunchback'.

In the diphthongs /ai/, /ui/, and /oi/ the final element appears as a palatal off glide before final /k/, e.g. /pampalaik/ 'butterfly'; /muik/ 'ant'; /horcocoik/ 'lizzard'. One other solution would be to assign the off glide to the glottal stop and set up the resulting segment as the final allophone of /c/. This would eliminate the contrast between the gap in distribution of final voiceless stops (see 2.).

1.3. Nasalization. Vowels are nasalized after all nasals. The nasalization is especially pronounced in final vowels, e.g. /gama/ 'rain'; /mu/ 'mouth'; /kaṇa/ 'one-eyed'; /ina/ 'that'. In the words of the type CVV'V(C), where V' is a non-syllabic vowel,[5] the nasalization extends over all vowels, e.g. /muiu/ 'calf'; /naua/ 'new'. Vowels are further nasalized before /n/ or /ṇ/ plus consonant, e.g. /kanth/ 'wall'; /ṭhoṇṭa/ 'beak', and before /niV/, e.g. /inia/ 'I' (see 2.3.).

1.4. Vowel Length and Stress. In single word utterances length and stress are predictable and therefore not phonemic. There are several phonetic degrees of vowel length. Vowels are longest in words of the type CV, e.g. /ka/ 'no'; /ti/ 'hand'. They are slightly shorter in words of the type CVC or CVCC, and in the first syllable of words of the type CVC'V(C), where C' may be /r/, /m/, /ḷ/, /ḍ/, /ṇ/, or /s/, e.g. /dal/ 'beat'; /bing/ 'snake'; /maḍi/ 'rice'; /buru/ 'mountain'; /gama/ 'rain'; /kuḷam/ 'chest'. Before other consonants and consonant clusters in disyllables of the above type, vowels are shorter yet, e.g. /seta/ 'dog'; /ili/ 'rice wine'; /sanga/ 'potato'; /jharka/ 'window'. Vowels are still shorter in non-final syllables of words of three or four syllables, e.g. /dakati/ 'robber'; /kokoetani/ 'beggar'. Vowels are shortest before final stops; e.g. /urik/ 'cattle'; /setak/ 'morning'; /got/ 'pick fruit'; /dup/ 'sit'. Final vowels in polysyllabic words vary between length similar to that of CV and CVC. They tend to be longer than the vowel of the preceding syllable.

5. C indicates any consonant, V any vowel, unless otherwise indicated. The parenthesis indicates that the item may or may not be there.

In words of more than one syllable stress is fairly evenly distributed. The last syllable is slightly more stressed than the rest, although occasionally in the same word, stress may be on the first syllable in one occurrence and on the second in another. Syllables ending in a phonetic glottal stop or a glottalized allophone of a stop are considerably more stressed than others.

In utterances containing more than one word, it is necessary to distinguish two kinds of stress: utterance primary and secondary. The primary stress usually coincides with a rise in pitch. The available data is not sufficient to determine whether this stress is part of the intonation pattern or whether it should be treated as a phoneme apart from rise or fall in pitch.

1.5. Diphthongs. Clusters of two vowels are called diphthongs. In these clusters the first vowel carries the greatest amount of sonority, the second vowel carries only slightly less. The following diphthongs occur:

Last element /i/: /ai/, /oi/, /ui/, e.g. /hai/ 'fish'; /goiṇṭha/ 'dried cow dung'; /kuila/ 'coal'; /muik/ 'ant'.

Last element /e/: /ae/, /oe/, e.g. /paera/ 'dove'; /baenga/ 'carrying pole'; /koe/ 'beggar'.

Last element /u/: /au/, /ou/; e.g. /hau/ 'red ant'; /ghau/ 'wound'.

Last element /a/: /oa/, /ua/, /ia/, /ea/, e.g. /joa/ 'jaw'; /sua/ 'parrot'; /real/ 'bed'; /dorea/ 'sea'; /kia/ 'needle tree'; /nuḷia/ 'coconut'.

Last element /o/: /eo/, e.g. /keonṭa/ 'fisherman'.

There are two instances, in the data, of long vowels in contrast with the vowels described in 1.2. Both of them are loan words from Oriya. In both cases the vowels in question are considerably longer than the phonetically long vowels discussed in 1.4. They will be written with double vowels in this analysis: e.g. /daali/ 'lentils'; /buu/ 'wife's elder sister'.[6]

1.6. Non-syllabic Vowels. The allophones of /i/ and /u/ are non-syllabic medially between vowels, e.g. /tuiu/ 'jackal'; /moiat/ 'one'; /naua/ 'new'; /toua/ 'milk'. Phonetically, vowels in this position have less vowel color than the final elements of diphthongs; occasionally they are accompanied by a small amount of palatal or labial friction noise. Since these non-syllabic vowels show some similarity in pattern to consonants, they might have been analyzed as /y/ and /w/. The data shows, however, no initial non-syllabic vowels. One other argument for this analysis is the fact that

6. More information is needed to determine the exact phonemic status of these vowels.

allophonic nasalization in disyllabic words with medial non-syllabic vowel extends over the entire word (see 1.3.). This is not true in the case of medial consonants.

2. Consonants. Mundari has eighteen consonants, including ten stops, two spirants, three nasals, two laterals and one trill. All consonants may occur in word initial and medial position, with the exception of /ṇ/ and /ḷ/. In word final position the data shows only voiceless stops /p/, /t/, /ṭ/, and /k/, nasals, laterals, /r/ and /h/ after stop. /g/ appears finally as part of the cluster /ng/ (see 2.3.).

2.1. General Allophonic Features. The phonetic values of consonant allophones differ considerably according to the position of the allophone within the word. Initial non-aspirate consonant allophones are preceded by a slight glottal constriction. This is most pronounced with voiced consonants. Initial stops further show strong plosion, initial /l/, /s/ and nasals are sometimes preceded by a slight vocalic onset. In medial intervocalic position stops show less plosion and spirants less friction than initially. In words of the type CVCV all medial consonants except /ḍ/, /ḷ/, /ṇ/, /s/, /m/ are fairly long. In final position /p/, /t/, /ṭ/ are strongly glottalized and unreleased; /k/ appears as a glottal stop (see 2. 2.). Since there is no contrast between single voiced and voiceless final stops, it would be possible to assign the final allophones to the voiced stops, if it were not for the fact that this would make it difficult to handle the contrast between /taink/ '(to) milk' and /jomeaing/ 'I eat', (see 2.3.). Final /l/, /m/ and /n/ are relatively long; /ḷ/ and /ṇ/ sometimes have a vocalic release. A similar release occurs also after stops and /ḷ/ before other consonants in medial position (see 2.6.), e.g. /siknik/ [sIk^{I}nI?] 'mosquito'; /kadla/ [kad^{ə}la] 'plantain'. If this release were treated as a full vowel, it would be necessary to set up either a phoneme of stress or another vowel phoneme to take care of the contrast between the above items and words like /dakati/ 'robber', where the medial /a/ has full stress.

2.2. Stops. /p/ and /b/ indicate voiceless and voiced bilabial stops respectively, e.g. /peḷa/ 'friend'; /ipil/ 'star'; /bing/ 'snake'; /rabang/ 'winter'. Initially before /o/ and medially after /u/ before /a/, /b/ has a slightly labialized release [b^{w}], e.g. /boda/ 'goat'; /nubak/ 'darkness'. The final allophone of /p/ is a glottalized unreleased stop [p'], e.g. /up/ 'see'.

/t/ and /d/ represent voiceless and voiced dental stops respectively, with tongue position similar to that of the equivalent Hindi sounds, e.g. /taian/ 'crocodile'; /hatu/ village'; /doho/ 'lake'; /sadom/ 'horse'. The final allophone of /t/ is [t'], e.g. /ut/ '(to) swallow'. In words of the structure /NVt/ or /NVV'Vt/, where N is any nasal and V' is non-syllabic /i/ or /u/,

the allophone of /t/ is [n'], a glottalized voiceless dental nasal, e.g. /met/ 'say'; /moiat/ 'one'.

/ṭ/ and /ḍ/ are voiceless and voiced retroflex stops, pronounced with the front of the tongue resting slightly behind the alveolar ridge and the tip curved towards the palate, e.g. /ṭangna/ 'peg'; /ḍaṭa/ 'tooth'; /ḍuba/ 'vessel'; /canḍuk/ 'moon'. In intervocalic position, before /h/ plus vowel after another vowel, and before /g/, /ḍ/ appears as a retroflex flap [ṛ], e.g. /gaḍa/ 'river', /kuḍhi/ 'lazy'; /beḍga/ 'dwarf'. The allophone of final /ṭ/ is [ṭ'] e.g. /jargi japuṭ/ 'rainy season'. There is one instance of [ṭ'] medially before /k/, e.g. /tuṭka/ [tuṭ'ka] 'neck'.[7]

/c/ and /j/ indicate voiceless and voiced palato-alveolar affricates, which pattern phonemically like stops. They are produced with the front of the tongue placed against the hard palate, slightly behind the alveolar ridge, e.g. /cilka/ 'how'; /muci/ 'cobbler'; /jojo/ 'tamerind'; /jiling/ 'tail'.

/k/ and /g/ represent fairly retracted voiceless and voiced velar stops, e.g. /kiring/ 'to buy'; /ṭaka/ 'money'; /gel/ 'ten'; /haga/ 'brother'; (for /g/ in the cluster /ng/, see 2.3.).

The glottal stop, which has been described as a characteristic feature of Munda languages, appears in three allophonic forms.[8] In words of more than one syllable and in monosyllables before diphthongs, in utterance medial position (i.e. not before speech pause), the value is [ʔ] or [ʔʰ], e.g. [layʔ] 'stomach'; [kawʔ] 'crow'; [gitiʔ] 'sleep'; [pampalayʔ] 'butterfly'. Before pause in these same items the glottal stop is followed by a voiceless vocalic release plus aspiration. The nature of the release is determined by the preceding vowel, e.g. [layʔih]; [kawʔuh]; [gɪtɪʔih]; [pampalayʔih]. After voiced consonant plus simple vowel, or after a single vowel, the glottal stop is followed by a voiced vocalic release somewhat lower and more centralized than the preceding vowel. This release occurs both utterance medially and before pause, e.g. [dəʔa<] 'water'; [dəʔa< ko] 'water (plural)'; [əʔa<] 'arrow'; [niʔi>] 'wound'; [dɛʔɛ>] 'climb'. All the above allophones are in complementary distribution with /k/, which does not occur finally. Phonetically they share the feature of plosion and voicelessness, and they are also fairly close in point of articulation. They can therefore be considered as allophones of /k/. The items given in the above examples

7. It might be possible to write this word /tuṭ ka/ (see 3.), however more evidence on the occurrence of /ṭ/ before /k/ is needed for a final solution.

8. Cf. Grierson, Hoffmann, and Bodding. The first two refer to it as 'checked consonants'; Hoffmann uses 'checked vowel'. All of them however agree in using one symbol for the three phonetically quite different allophones.

may therefore be written phonemically as follows: /laik/; /kauk/; /gitik/; /pampalaik/; /dak/; /dak ko/; /ak/; /nik/; /dek/.

2.3. Nasals. /m/ indicates a voiced bilabial nasal, e.g. /meram/ 'goat'; /gama/ 'rain'. /n/ represents a dental nasal with tongue position similar to that of /d/, e.g. /nida/ 'night'; /bana/ 'bear'; /taran/ 'shoulder'; /san/ 'wood'.

There are a number of other allophones of /n/. Before final /ṭ/ and /th/ there is free variation between [~] and the nasal stop with nasalization of the preceding vowel, e.g. /unṭ/ 'camel'; /kanth/ 'wall'. (There are no examples for final /t/.) Before medial /ṭ/ and /ḷ/ and final /k/, only nasalization is audible, e.g. /keonṭa/ 'fisherman'; /aunḷa/ 'a fruit'; /taink/ '(to) milk'.[9] Nasalization in these environments is more pronounced than after nasals, (see 1.3.).

/n/ has the allophone [ŋ] before /g/ and medial /k/. In final position the /g/ is not released, so that the cluster /ng/ appears as [ŋ·]. Finally after /ai/ the allophone is considerably fronted ([ŋ<]), and the preceding vowels are strongly nasalized, e.g. /ranga/ 'red'; /ṭunki/ 'basket' /jang/ 'seed'; /kaing/ 'not (infl.)'. Before and after /i/ plus vowel there is free variation between [ñ] and the nasalized palatal spirant [ỹ], e.g. /inia/ [Inia] or [Iỹa] 'my'; /iniam/ [Iñam] or [Iỹam] '(to) cry'.

/ṇ/ is a retroflex nasal with tongue position similar to /ḍ/, e.g. /maṇ/ 'a plant'; /meṇḍhi/ 'sheep'. In fast speech /ṇ/ sometimes appears as a nasal flap, in medial intervocalic position, e.g. /kaṇa/ 'one-eyed man'; /ceṇe/ 'bird'.

2.4. Spirants. /s/ indicates a voiceless alveolar spirant, produced with the front of the tongue placed against the alveolar ridge, e.g. /sanga/ 'potato'; /sasang/ 'turmeric'.

/h/ is a glottal spirant having two allophones, [h], a voiced glottal spirant pronounced with considerable friction in the glottis, occurring initially before vowels and also medially between vowels and after vowels before consonants, e.g. /hoṭok/ 'throat'; /mohu/ 'honey'. The allophone ['] (aspiration) occurs initially, medially and finally after stops (for examples see 2.6).

2.5. Laterals and Trills. /l/ appears as a dental lateral with tongue position similar to that of /d/, e.g. /lutur/ 'ear'; /ruli/ 'wristband'; /maskal/ 'light'. /ḷ/ represents a retroflex lateral with tongue position similar to that

9. These are the only examples in the data.

of /ḍ/. Finally before pause it appears with a central vocalic release [ḷᵊ], e.g. /kuḷi/ 'wife'; /bengaḷ/ 'brinjal'.

/r/ indicates an alveolar tongue tip trill accompanied by a fair amount of friction noise, e.g. /rembil/ 'cloud'; /sarsar/ 'finger nail'.

2.6. Consonant Clusters. Aside from aspirates, i.e. clusters of consonant plus /h/, most consonant clusters occur only medially. There are no initial clusters, and finally only /ng/ and sequences of nasal plus aspirates occur.

Medial two consonant clusters fall into the following groups:

(a) Nasal plus consonant: /mp/, /mb/, /mt/, /nd/, /nj/, /nc/, /ṇḍ/, /ṇṭ/, /nk/, /ng/, /nṭ/, /nḷ/. (Examples for the last four are given in 2.5.), e.g. /pampalaik/ 'butterfly'; /rembil/ 'cloud'; /cimtung/ 'when'; /hende/ 'black'; /honjar/ 'wife'; /gulincu/ 'sling'; /phuṇḍi/ 'white'; /ṭhoṇṭa/ 'beak'.

(b) Lateral trill or spirant plus consonant: /lk/, /lp/, /ḷk/, /ḷs/, /rk/, /rg/, /rd/, /rn/, /rc/, /rs/, /sk/, /st/, e.g. /talka/ 'foot'; /silping/ 'door'; /kaḷkom/ 'crab'; /kaḷsa/ 'vessel'; /arki/ 'wine'; /jargi japuṭ/ 'storm'; /bardulit/ 'bat'; /jhorna/ 'stream'; /murci/ 'vegetable'; /sirma/ 'year'; /sarsar/ 'finger nail'; /maskal/ 'light'; /mastur/ 'teacher'.

(c) Stop plus stop, stop plus nasal, nasal plus nasal: /pk/, /pt/, /pn/, /ḍg/, /cn/, /kṇ/, /mṇ/. (For ḍk in /tuḍka/ see 2.2.). In all these clusters the stop is followed by a central vowel release, the quality of which depends on the vowel of the preceding syllable, it is [I] after /i/, [ə] after /a/, etc., e.g. /capka/ 'disease of the tongue'; /cepta/ 'flat'; /pipni/ 'eyebrow'; /beḍga/ 'dwarf'; /siknik/ 'mosquito'; /ḍhemṇa/ 'a type of snake'.

(d) Consonant plus lateral, trill, or /s/: /pl/, /dl/, /gḷ/, /kḷ/, /tr/, /ṭr/, /kr/, /hl/, /hn/. Stops are followed by a vocalic release before retroflex /ḷ/. E.g. /diplang/ 'when'; /kadla/ 'plantain'; /phogḷa/ 'toothless'; /mukḷi/ 'knee'; /putra/ 'elder brother's son'; /ceṭre/ 'miser'; /sukri/ 'pig'; /dahli/ 'turban'.

Three consonant clusters are few. All of them begin with a nasal plus homorganic stop. The medial stop is followed by a central vowel release: /mbl/, /ndr/, /ngn/, /ngt/, e.g. /rembla/ 'black gram'; /bindri/ 'spider'; /ṭangna/ 'peg'; /sungti/ 'friend'.

Aspirates show more similarity in pattern to single consonants than to clusters. They are analyzed as clusters here to avoid setting up a special phoneme of aspiration. Aspirates occur initially, medially and finally. They also enter into clusters with other consonants. All stops and medial /r/ and /ḷ/ may be followed by /h/. Examples for final aspirates are some-

what rare in the data; only /ph,/ /th/, /kh/, and one example of /gh/ occur.

(a) Initial aspirates, e.g. /bhagina/ 'sister's son'; /pharca/ 'clean'; /thega/ '(to) kick'; /dhali/ 'strong'; /ḍhelka/ 'clod'; /ṭhote/ 'a type of arrow'; /choṭa/ 'tame'; /jharka/ 'window'; /khecol/ 'jump'; /ghirni/ 'lizzard'.

(b) Medial aspirates, e.g. /gadha/ 'ass'; /aṭha/ 'stick'; /kuḍhi/ 'lazy'; /ajhanar/ 'wife's elder brother'; /panicha/ 'bow string'; /barha/ 'wild pig'; /dalhi/ 'chin'.

(c) Final aspirates, e.g. /kaph/ 'woman's earring'; /joutukh/ 'marriage present'; /roth/ 'chariot'; /maharagh/ 'dear'.

(d) Clusters of consonant plus medial aspirates, e.g. /cortha/ 'without scruple'; /cunṭhi/ 'miser'; /menḍhi/ 'sheep'; /nampho/ 'lamp'; /majhla/ 'second'.

(e) Clusters of nasal plus aspirate (final), e.g. /kanth/ 'wall'; /benth/ 'cane'.

3. Word Juncture. Examination of utterances of one syllable shows that certain phonemes have differing allophonic shapes depending on whether they occur after pause, before pause, or between other segments. Thus, voiced consonants and vowels have glottal constriction after pause and voiceless consonants are relatively fortis; stops are glottalized before pause, /n/, /r/, and /m/ are relatively long, etc. see 2.1.). The situation in words of more than one syllable may be illustrated by means of the following examples:

1. /ne bing/ 'that snake'.
2. /rabang/ 'winter'.
3. /khup ko/ 'good (inflected)'.
4. /capka/ 'disease of the tongue'.

In example one, the segment [ɛ] has vowel length similar to that of final vowels in one word utterances of the type /CV/ (see 1.4.); the segment [b] is preceded by glottal constriction and has strong plosion, as is characteristic of initial consonants in utterances of one syllable. In example two, the [ə] of the first syllable is shorter; the [b] is relatively lenis and has no glottal constriction. In example three, the [p'] is glottalized, and the [k] is relatively fortis. In four, [p] is not glottalized, and both medial stops are relatively lenis. This type of distribution may be analyzed in two ways: It would be possible to set up separate phonemes for glottalized [p'], non-glottalized [p], lenis [b], [b] preceded by glottal constriction and for all other allophones mentioned above. It is also possible to set up a phoneme of juncture. The latter solution is preferred here. Phonetically, juncture is characterized by allophonic features of the segments that precede and follow. In slow speech, juncture is sometimes accompanied by a slight

hesitation in speech, but this is not always so. In fast speech, on the other hand, juncture is often not heard in places where one would normally suspect it. Juncture is written as space.

The term word, as used in this paper, may be defined as a stretch of speech between two junctures. The phonemic word division arrived at by this definition does not always coincide with the traditional word divisions for Mundari, which are based on morphological rather than phonemic criteria.[10] Thus, in /ti ko/ 'hands', the phonetic length of the [i] segment is longer than the [a] in /taka/ 'money', and the allophone of /k/ indicates the presence of word juncture. Similarly, verbal forms like /jom gia/ 'eat (future)'; /senok tana/ 'go (present)' are two words phonemically, since in the first example the [m] has length characteristic of word final position, the [g] is the initial allophone; in the second, the allophone of /k/ is [?]. The above remarks should not be construed as a criticism of the traditional word divisions, since this paper does not deal with morphology. They simply serve to point out possible interesting differences between phonemic and morphological words in Mundari.

4. Syllable Structure. The following types of syllable structure occur. Words of one and two syllables are most frequent. Words of three and four syllables are rare.

(a) Monosyllables: VV, VC, VVC, VCC, CV, CVV, CVC, CVVC, CVCC,[11] e.g. /ae/ 'seven'; /up/ 'hair'; /aek/ 'he'; /ing/ 'I'; /ka/ 'no'; /hai/ 'fish'; /bir/ 'forest'; /gaul/ 'milkman'; /bing/ 'snake'.

(b) Dysyllables: VCV, VCCV, VCCVV, VCVC, VVVC, CVVV, CVVVC, CVVVCC, CVCV, CVVCV, CVCVV, CVCCV, CVCCVV, CVCVC, CVCCVC, e.g., /utu/ 'a vegetable'; /arki/ 'wine'; /upnia/ 'four'; /olak/ 'house'; /aiak/ 'his'; /naua/ 'new'; /taian/ 'crocodile'; /maiang/ 'bent back'; /gudu/ 'mouse'; /kuila/ 'coal'; /penai/ 'weaver'; /ranga/ 'red'; /bohnai/ 'elder sister's husband'; /tasat/ 'grass'; /bengal/ 'brinjal'; /rembla/ 'black gram'.

(c) Trisyllables: VCVCVC, CVCVCV, CVCCVCVC, CVCVCCV, CVCVCVC, CVCVVVC, CVCVVVCC, e.g., /ajhanar/ 'wife's elder sister'; /dakati/ 'robber'; /bardulit/ 'bat'; /cikalka/ 'how'; /katikat/ 'stick'; /kataiam/ 'deaf'; /jomeaing/ '(I) eat.'[12]

(d) Four syllables: CVCVVCVCV, e.g., /kokoetani/ 'beggar'.

Words of three or more syllables are rare in the data.

10. Cf. Grierson and Hoffmann.
11. In these examples "C" indicates any simple consonant or aspirate.
12. In vowel clusters of this type, the first vowel is part of the third syllable.

TRACE OF AN OLD PALATAL *ẑh > j IN SANSKRIT

By

M. A. Mehendale, *Poona*

It is well known to the students of the historical phonology of Sanskrit that IE palatal *ĝh* survives in Sanskrit as *h* (< *ẑh*). It seems, however, probable to demonstrate its survival also as *j* (< *ẑ* with loss of aspiration) in an OIA form *ujjayati* occurring in the Śatapatha Brāhmaṇa in the description of the Vājapeya sacrifice.

One of the peculiarities of this sacrifice is the drawing of the seventeen Surāgrahas along with an equal number of the Somagrahas. About the symbolism of this act we read in the Brāhmaṇa (5.1.2.10-13): *atha saptadaśa Somagrahān gṛhṇāti/ saptadaśa Surāgrahān Prajāpater vā ete andhasī yat Somaś ca Surā ca tataḥ satyaṁ śrīr jyotiḥ Somo 'nṛtaṁ pāpmā tamaḥ Suraite evaitad ubhe andhasī ujjayati sarvaṁ vā eṣa idam ujjayati yo Vājapeyena yajate Prajāpatiṁ hy ujjayati sarvam u hy evedaṁ Prajāpatiḥ* (10). *sa yat saptadaśa/ Somagrahān gṛhṇāti saptadaśo vai Prajāpatiḥ Prajāpatir yajñaḥ sa yāvān eva yajño yāvanty asya mātrā tāvataivāsyai tat satyaṁ śriyaṁ jyotir ujjayati* (11). *atha yat saptadaśa/ Surāgrahān gṛhṇāti saptadaśo vai Prajāpatiḥ Prajāpatir yajñaḥ sa yāvān eva yajño yāvaty asya mātrā tāvataivāsyai tad anṛtaṁ pāpmānaṁ tama ujjayati* (12). *ta ubhaye catustriṁśad grahāḥ sampadyante/ trayastriṁśad vai devāḥ Prajāpatiś catustriṁśas tat Prajāpatim ujjayati* (13). Eggeling translates (SBE 41.8-9) the above as follows: "He (the Adhvaryu) then draws seventeen (other) cups of Soma, and (the Nesh*tri*) seventeen cups of Surâ (spirituous liquor), for to Pragâpati belong these two (saps of) plants, to wit the Soma and the Surâ;—and of these two the Soma is truth, prosperity, light; and the Surâ untruth, misery, darkness: both these (saps of) plants he thereby wins; for he who offers the Vâgapeya wins everything here, since he wins Pragâpati, and Pragâpati indeed is everything here (10). Now as to why he draws seventeen cups of Soma;—Pragâpati is seventeenfold, Pragâpati is the sacrifice: as great as the sacrifice is, as great as is its measure, with that much he thus wins its truth, its prosperity, its light (11). And why he draws seventeen cups of Surâ;—Pragâpati is seventeenfold, Pragâpati is the sacrifice: as great as the sacrifice is, as great as is its measure, with that much he thus wins its untruth, its misery, its darkness (12). These two amount to thirty-four cups; for there are thirty-three gods, and Pragâpati is the thirty-fourth: he thus wins Pragâpati (13)."

Now in the above extract the use of *ujjayati* with Prajāpati and *sarvam idam* is quite understandable since this identification is common in the Brāhmaṇa literature and according to the Āp. Ś. S. the very purpose of the Vājapeya sacrifice is the winning of Prajāpati (cf. *Prajāpatim āpnoti* 18.1.3). What strikes us, however, is its use with both Soma and Surā (*ubhe andhasī*) without apparent distinction when the former has been identified with truth, prosperity, and light and the latter with untruth, misery, and darkness. EGGELING translates *ujjayati* in both contexts as 'wins'. But it must be admitted that this reads rather awkward. It is reasonable for the Brāhmaṇa passage to tell us that the Adhvaryu seeks *to win* for the sacrificer truth, prosperity, and light with the help of the Somagrahas, but it is quite contrary to our expectation to hear the same text tell us that the other priest seeks *to win* for the sacrificer also untruth, misery, and darkness by drawing the Surāgrahas.

In all our ancient literature, whether philosophical or otherwise, we often find passages to show that gods and men have aspired to gain truth, prosperity, and light and not their opposites. To give only a few instances we may cite the following about truth (*satya*):—

tasya vā etasyāgnyādheyasya / satyaṁ evopacāraḥ sa yaḥ satyaṁ vadati yathāgniṁ samiddhaṁ taṁ ghṛtenābhiṣiñced evaṁ hainaṁ sa uddīpayati tasya bhūyo-bhūya eva tejo bhavati śvaḥ-śvaḥ śreyān bhavaty atha yo 'nṛtaṁ vadati yathāgniṁ samiddhaṁ tam udakenābhiṣiñced evaṁ hainaṁ sa jāsayati tasya kanīyaḥ-kanīya eva tejo bhavati śvaḥ-śvaḥ pāpīyān bhavati tasmād u satyam eva vadet / Śat. Br. 2.2.2.19. EGGELING translates (SBE 12. 312-313) — "Now, attendance on (or, the worship of) that consecrated fire (agnyâdheya) means (speaking) the truth. Whosoever speaks the truth, acts as if he sprinkled that lighted fire with ghee; for even so does he enkindle it: and ever the more increases his own vital energy, and day by day does he become better. And whosoever speaks the untruth, acts as if he sprinkled that lighted fire with water; for even so does he enfeeble it: and ever the less becomes his own vital energy, and day by day does he become more wicked. Let him, therefore, speak nothing but the truth."[1]

Similarly we get passages to show that it was prosperity (*śrī*), and not its opposite, that was considered desirable by gods and men. To quote again from the Śatapatha Brāhmaṇa 14.1.1.3: *ta āsata / śriyaṁ gacchema yaśaḥ syāmānnādāḥ syāmeti tatho eveme satram āsate ye satram āsate śriyaṁ gacchema yaśaḥ syāmānnādāḥ syāmeti /* EGGELING (SBE. 44.441)—"They[2]

1. For the desirability of truth as a protective power also cf. the famous instance given by Uddālaka Āruṇi to Śvetaketu in Ch. Up. 6.16. For the use of the verb √*ji* with *satya* cf. *satyajit* VS 17.83, AV 4.17.2, *satyajiti* Kāty. Ś.S. 19.5.4.

2. i.e., the gods.

entered upon the session thinking, 'May we attain excellence! may we become glorious! may we become eaters of food!' And in like manner do these (men) now enter upon the sacrificial session thinking, 'May we attain excellence! may we become glorious! may we become eaters of food!' "

It is hardly necessary to give again many instances to show that what applies to truth and prosperity, applies equally to light (*jyotiṣ*). To give a random instance from the Ṛgveda we may cite: *jīvā́ jyótir aśīmahi* (7.32.26) "living, may we obtain light", and refer to the famous prayer from the Bṛhad. Up. *tamaso mā jyotir gamaya* (1.3,28) "Lead me from darkness to light."[3]

As against the above passages showing that it were *satya, śrī,* and *jyotiṣ* which were considered as desirable possessions, we may cite a few others just to show that their opposites were never sought to be 'won', but were deemed as worth 'striking down or driven away' both by gods and men.

(1) *anṛta*: *ávātiratam ánṛtāni víśvā ṛténa Mitrāvaruṇā sacethe* / ṚV. 1.152.1. "Alle Ungesetzlichkeiten[4] unterdruecktet ihr; ihr haltet es mit dem Gesetz,[4] Mitra und Varuṇa!"[5] (GELDNER)

(2) *pāpman*: *yathā vai manuṣyā evaṁ devā āsan te 'kāmayantāvarttiṁ pāpmānaṁ mṛtyum apahatya daivīṁ saṁsadaṁ gacchemeti ta etaṁ Caturviṁśatirātram apaśyan tam āharan tenāyajanta tato vai te 'varttiṁ pāpmānaṁ mṛtyum apahatya daivīṁ saṁsadam agacchan ya evaṁ vidvāṁsaś Caturviṁśatirātram āsate 'varttim eva pāpmānam apahatya śriyaṁ gacchanti śrīr hi manuṣyasya / daivī saṁsaj....* (TS. 7.4.2.1-2). KEITH (HOS. 19.600):

"As are men, so were the gods in the beginning. They desired, 'Let us strike off the misfortune, the evil of death,[6] and reach the conclave of the gods.' They saw this twenty-four night (rite); they grasped it, and sacrificed with it. Then they struck off the misfortune, the evil of death,[6] and reached the conclave of the gods. Those who knowing thus perform the twenty-four night (rite) strike off the misfortune, the evil, and win prosperity, for the conclave of the gods is in the case of man prosperity...."[7]

3. Also cf. ṚV 2.27.11; 3.34.4; 4.1.14 etc.; VS 8. 52,20.21; AV 8.1.21; 8.2.2; Śat. Br. 14.1.1.33.

4. Rather 'untruths' and 'truth'.

5. Also cf. ṚV 7.66.13; VS 6.17; etc.

6. Rather 'evil (and) death'.

7. It may also be noted that while taking fire from the Gārhapatya, one says: *uddhriyamāṇa uddhara pāpmano mā yad avidvān yac ca vidvāṁś cakāra/* (Śāṁkh. ŚS. 2.6.6). Also cf. ṚV 1.24.9; 3.7.10; VS 3.45; AV 1.115.1-3; 10.1.10; 3.4; etc.

(3) *tamas*: *sauryáṁ bahurūpám ālabhetāmúm evādityáṁ svéna bhāgadhéyenópadhāvati sá evāsmāt támaḥ pāpmā́nam ápahanti pratīcy asmai vyucchántī vyúcchaty ápa támaḥ pāpmā́naṁ hate* / (TS. 2.1.10.3). KEITH (HOS. 18. 144):

"he should offer to Sūrya (a beast) of many forms; verily he has resort to yonder sun with its own share; verily it drives away the darkness, the evil, from him, the dawn shines upon him, he strikes away the darkness, the evil."[8]

It will thus be seen that we often come across passages to show that *anṛta*, etc., were not considered fit to be 'won' in the same sense as *satya*, etc. It should not be argued against the objection raised here to the use of *ujjayati* with *anṛta*, etc., to say that it is used in the sense 'to conquer, to bring under control'. For apart from the fact that *ud*√*ji* is not used in this sense elsewhere, it is worth noting that we do not come across statements to illustrate the use of √*ji* with *anṛta, pāpman,* and *tamas.* What we get instead is their use with verbs to mean 'to cross over, to go beyond', 'to strike or drive away', 'to burn', or 'to shake away, to abandon'. A few instances may be given here which are taken from the principal Upaniṣads.[9] *tarati śokaṁ tarati pāpmānaṁ* Muṇḍaka 3.2.9, *nainaṁ pāpmā tarati sarvaṁ pāpmānaṁ tarati nainaṁ pāpmā tapati sarvaṁ pāpmānaṁ tapati* Bṛhad. 4.4.23, *papmānam apahatya* Ait. 3.8.4, Bṛ. 1.3.10,11 (*pāpmānaṁ mṛtyum apahatya athainā mṛtyum atyavahat*), *hanti pāpmānaṁ jahāti ya evaṁ veda* Bṛ. 5.5.3,4; *apahatapāpmā* Ch. 8.7; *śarīre pāpmano hitvā* Taitt. 2.5; *ya idaṁ sarvaṁ pāpmano 'trāyata* Ait. 2.1: *aśva iva romāṇi vidhūya pāpaṁ* Ch. 8.13; *sarvān pāpmana auṣat* Bṛ. 1.4.1; *yady api bahv iva pāpaṁ kurute sarvam eva tat saṁpsāya* Bṛ. 5.14.8; *pāpanudaṁ* Śve. 6.6; *na sa pāpmano vyāvartate* Bṛ. 1.5.2; *evaṁ hāsya sarve pāpmānaḥ pradūyante* Ch. 5.24; *tasmai mṛditakaṣāyāya tamasas pāraṁ darśayati* Ch. 7.26; *tamasaḥ pāraṁ gamiṣyati* Maitri 6.30; *svasti vaḥ pārāya tamasaḥ parastāt* Muṇḍaka 2.2.6; *tamaḥ praṇudati* Maitri 2.2; *bhittvā tamaḥ* Maitri 6.24.

Starting then from the fact that *anṛta, pāpman,* and *tamas* were considered as something 'to be driven away, to be given up' it is possible to suggest a more satisfactory explanation of *ujjayati* when used with them. In all probability it seems to stand for an older form **ujjhayati* (<**uj-źhayati*) meaning 'abandons, gives up, etc.' The loss of aspiration in this form seems to have occasioned its mingling with *ujjayati* 'wins, etc.' which occurs

8. We may also cite: *śaśvat putreṇa pitaro 'tyāyan bahulaṁ tamaḥ*/ Ait.Br. 7.3. *támas* is called *ájuṣṭa* in ṚV 7.75.1.

9. For other literature one may do well to look up to the *Pertersburg Woerterbuch* under the respective words.

so often in this section of the Śatapatha Brāhmaṇa. This (*ud-*) **jhayati* can be derived from IE root * *ĝhēi* 'verlassen, fortgehn' which is given by Walde-Pokorny I 542-43 and Pokorny 5.418-19. * *jhayati* (1st conj. cf. Avestan participle *uzayanto*) is obviously akin to Sk. *jahāti* (3rd conj.) 'abandon, etc.' going back to IE * *ĝhē,* from which we have the past participle *ujjhita* (*ud* + * *ĝhitá*) with the same prefix as in * *ujjhayati.*[10] With this explanation the text under consideration would mean that the drawing of the seventeen Surāgrahas was intended for symbolising the abandoning (and not winning) of *anṛta, pāpman,* and *tamas.* When *ujjayati* occurs in the expression *ubhe andhasī ujjayati* we have naturally to suppose that here both *ujjayati* and * *ujjhayati* have fallen together so that once *ujjayati* means 'wins' when it refers to Soma, and once it means 'abandons' (as coming from * *ujjhayati*) when it refers to Surā.

The passage quoted at the commencement of this article can now be translated, with the necessary changes in Eggeling's translation, as follows: "He (the Adhvaryu) then draws seventeen (other) cups of Soma, and (the Neṣṭṛ) seventeen cups of Surā. These two (saps of) plants, to wit the Soma and the Surā, belong to Prajāpati; of these two the Soma is truth, prosperity, light; and the Surā is untruth, misery, darkness. Both these very (saps of) plants he thereby (respectively) wins (*ujjayati*) and abandons (*ujjayati* < * *ujjhayati*); for he who offers the Vājapeya wins everything here, since he wins Prajāpati and Prajāpati is indeed everything here ...... And why he draws seventeen cups of Surā; — Prajāpati is seventeen-fold, Prajāpati is the sacrifice: as great as the sacrifice is, as great as is its measure, with that much he thus abandons its untruth, its misery, its darkness. These two amount to thirty-four cups; for there are thirty-three gods, and Prajāpati is the thirty-fourth; he thus wins Prajāpati."

It may now be shown that the above interpretation of the passage based on the two-fold derivation of *ujjayati* is supported by the ritual practice of the Vājapaya and further by a literary usage in the Muṇḍaka Upaniṣad. First then to the ritual. The method of drawing and disposal of these two sets of cups, viz. those of Soma and of Surā, clearly show that it was intended from the beginning to keep a complete distinction between the two, and that the two were not allowed to co-mingle. The two were purchased separately, had a separate entrance, separate drawing, separate placing, and separate disposal. This procedure is a clear pointer to the fact that there was no question of 'winning' the Surāgrahas and what it stood for, not also

10. Sk. *ujjhati* 'leaves, gives up, etc.' occurring from the epics is clearly a new formation from *ujjhita* as already noted by Uhlenbeck (*Kurz. Et. W.*). His other explanation based on Wackernagel I. 164 is not probable. For the above explanation of *ujjhita* ≤ *ud-hā* through *ud-ẑhitá* see Leumann *IF* 58.20 ff. (1942).

of 'conquering' them, but undoubtedly abandoning them, giving them away. To give some details about the procedure it may be mentioned that the seventeen Soma cups are drawn by the Adhvaryu seated in front of the axle of the Soma cart with his face westwards, while the Surā cups are drawn by the Neṣṭṛ (or Pratiprasthātṛ according to the Āp. Ś.S.) while sitting behind the axle with his face turned eastward (Śat. Br. 5.12.16). Then there are two separate earthern mounds (*khara*) erected for depositing the cups, one in front of the axle for the Soma cups and one behind the axle for the Surā cups. The purpose of erecting two mounds is stated as *net somagrahāṁś ca surāgrahāṁś ca saha sādayāma* (5.1.2.15) "lest we should deposit together the cups of Soma, and the cups of Surâ" (EGGELING). The Adhvaryu and the Neṣṭṛ do not hold the Soma and the Surā cups beyond the axle — *nej jyotiś ca tamaś ca saṁsṛjāva* (5.1.2.17) "lest we should confound light and darkness" (EGGELING). The Adhvaryu now says *sampṛcau sthaḥ sam mā bhadreṇa pṛṅktaṁ*[11] with reference to the Soma cups before placing them on the mound. The Neṣṭṛ, however, says, *vi pṛcau stho vi mā pāpmanā pṛṅktaṁ*[11] with reference to the Surā cups. The significance of the latter mantra is explained in the Śat. Br. 5.1.2.18 as — "Even as one might tear a single reed from a clump of reed-grass, so do they thereby tear him out of all evil: there is not in him so much sin as the point of a grass-blade."[12] (EGGELING). This passage as well as the following given below should leave no doubt about the interpretation of *ujjayati* with the Surā cups as coming from * *ujjhayati*. In the following section we are told that the Somagrahas are offered and drunk at the evening pressing (Ś. B. 5.1.2.19). But about the Surāgrahas we read — "And the Nesh*tri*, taking the cups of Surâ, steps out by the back door. He walks round by the back of the hall, and placing one (of the cups) in the Vaisya's, or Râganya's, hand, he says, (ŚB. 5.1.5.28) 'With this I buy him of thee!'[13] For the Soma is truth, prosperity, light; and the Surâ is untruth, misery, darkness: he thus imbues the Sacrificer with truth, prosperity, and light; and smites the Vaisya with untruth, misery, and darkness."[14] (EGGELING).

11. VS. 9.4.

12. *tad yatheṣīkāṁ muñjād vivṛhed evam enaṁ sarvasmāt pāpmano vivṛhatas tasmin na tāvac canaino bhavati yāvat tṛṇasyāgram/*

13. This refers to the taking of the Madhugraha from a Vaiśya or a Śūdra in exchange of the Surāgrahas. The Madhugraha is then given to the Brahman priest (cf. also Kāty. Ś.S. 14.4.15-17).

14. *anena ta imaṁ niṣkrīṇāmīti .... satyam evaitac chriyaṁ jyotir yajamāne dadhāty anṛtena pāpmanā tamasā Vaiśyaṁ vidhyati/.*

It is worth noting that the Surā is not offered in the Āhavanīya. The Surā cups are taken to the Mārjālīya, shaken, and drunk by those who participated in the race. Cf. Āp. Ś.S. 18.7.2, 4, 8.

Now about the Upaniṣadic passage in favour of the interpretation of *ujjayati* in the sense 'to win' only when going with *satya* and not its opposite *anṛta*. In the Muṇḍaka 3.1.6 we read the famous line — *satyam eva jayate nānṛtam*. It has been usual to take *satyam* here as the subject of *jayate*[15] and accordingly translate the line as 'truth alone conquers, (and) not falsehood.' But there is some difficulty about this interpretation, because in the principal Upaniṣads *satya* appears only as something to be described, being often identified with Brahman, Ātman, Āditya or Dharma;[16] or as an object of *upāsanā* or knowledge;[17] or as a means to obtain the soul.[18] About *satya* as something worth seeing at death we have the well known verse from the Īśopaniṣad 15 (also Bṛ. 5.15.1): *hiraṇmayena pātreṇa satyasyāpihitaṁ mukham/ tat tvaṁ pūṣann apāvṛṇu satyadharmāya dṛṣṭaye//*[19] But nowhere does *satya* appear as a subject being associated with any activity as its agent.[20] In the light of these observations it would not be possible to construe *satyam* as the subject of *jayate* in the line referred to above. Also the context does not justify it. Just in the preceding verse we are told about truth (and knowledge etc.) being used as a means by an ascetic to obtain the soul (*satyena labhyaḥ ...... hyeṣa ātmā ...... yaṁ paśyanti yatayaḥ kṣīṇadoṣāḥ* — Muṇḍaka 3.1.5). An ascetic (*yati*) is the subject there, *satya* the means. In our verse, in the second half, we are told that the sages go along the *devayāna* to reach the place which is the highest store of truth (*yenākramanty ṛṣayo hy āptakāmā yatra tat satyasya paramaṁ nidhānaṁ*). A sage (*ṛṣi*) is the subject here, *satya* apparently the object. In between these two statements, it is not correct to regard *satyam* as the subject of

15. The controversy about the reading *jayate* or *jayati* may be left for the time being to a critical examination of the manuscript material.

16. *tad etad akṣaraṁ brahma sa prāṇas tad u vāṅ manaḥ/ tad etat satyaṁ tad amṛtaṁ tad veddhavyaṁ Somya viddhi//* Muṇḍaka 2.2.2, *tasya ha vā etasya brahmaṇo nāma satyam iti /* Chānd. 8.3, *satyaṁ hy eva brahma* Bṛ. 5.4; *tat satyaṁ sa ātmā tat tvam asi Śvetaketo/* Chānd. 6.8.16; *tad yat tat satyaṁ asau so ādityaḥ/* Bṛ. 5.5.2; *yo vai sa dharmaḥ satyaṁ vai tat/* Bṛ. 1.4.14.

17. *te devāḥ satyaṁ eva upāsate/* Bṛ 5.5.1, also 6.2.15, *satyaṁ tv eva vijijñāsitavyam/* Chānd. 7.16.

18. *satyena labhyas tapasā hy eṣa ātmā samyajjñānena brahmacaryeṇa nityam/* Muṇḍaka 3.1.5; *evam ātmani gṛhyate 'sau satyenainaṁ tapasā yo 'nupaśyati/* Śve. 1.15.

19. On which LUEDERS (*Varuṇa*, p. 26) observes: "Aber auch die Sonne ist doch nur ein Abglanz der hoechsten, reinen Wahrheit. Erst wenn in der letzten Stunde die Seele den Koerper verlaesst, schaut man rein und unverhuellt die Wahrheit hinter der Decke der Sonne."

20. Perhaps the only exception could be in the cosmogonical account in the Bṛ. Up. 5.5.1 where we read: *āpa evedam agra āsuḥ/ tā āpaḥ satyam asṛjanta satyaṁ brahma brahma prajāpatiṁ......*But usually here *satyaṁ* and Brahma are considered identical. Hence HUME translates: ".....That water emitted the Real - Brahma (being) the Real —; Brahma Prajāpati.....".

jayate. Obviously a yati or a ṛṣi is intended as the subject and *satya* the object. The line therefore means—"(He) wins for himself (hence perhaps the use of Ātmanepada) only truth and not untruth (as means and as an end)." It would be interesting to cite here Śaṅkara's comments on this passage, though his ultimate interpretation differs from the one suggested here as he does not take *satyam* and *anṛtam* as objects of *jayate.* He says, "*na hi satyānṛtayoḥ kevalayoḥ puruṣānāśritayor jayaḥ parājayo vā sambhavati/ prasiddhaṁ loke satyavādinā 'nṛtavādy abhibhūyate na viparyayo 'taḥ siddhaṁ satyasya balavat sādhanatvam/*".

One cannot object to this interpretation on the ground that in the preceding verse (Muṇḍaka 3.1.5.) and in the present one (3.1.6) *yatayaḥ* and *ṛṣayaḥ* are plural forms while in *satyam eva jayate* we have supposed yati or ṛṣi in the singular. For, in the present section of the Upaniṣad we find the use of singular in many other verses. But if the point is still stressed, it has to be pointed out that *jayate* lends itself being interpreted also as 3rd plural Ātm. √*ji* in the 2nd conjugation attested in Vedic forms like *jeṣi.*

It is thus clear that the Upaniṣadic line *satyam eva jayate nānṛtam* gives good evidence to show that in the ancient tradition it was truth alone which was regarded as fit to be won and not untruth and that the use of √*ji* was suited for *satya* and not *anṛta.* It would, therefore, be correct to take *ujjayati* 'wins' only with the Soma cups, and not the Surā cups in the Brāhmaṇa passage; in the latter case *ujjayati* = **ujjhayati* 'abandons'.

SINGING IN LUSHAI

By

William BRIGHT, *Poona*

Students of linguistics, when first becoming acquainted with tone languages,[1] sometimes wonder how such languages are sung: is there any agreement between the phonemic pitches of syllables and the pitches of the song melody; or is one pitch system sacrificed, as it were, to the other? Information on the question has been given by George Herzog for the Navaho language of the South-western United States,[2] and by Y. R. Chao for Mandarin Chinese.[3] The different answers given for these two cases point up the fact that no general answer can be given to the question, and that each tone language must be investigated separately.

In connection with the 1956 Summer School of Linguistics at Deccan College, Poona, the situation has been investigated in Lushai, a Tibeto-Burman language of Assam. The source of information was Mr. Lal Renga SAILO, whose home is the town of Hmawngkawn in the northern Lushai Hills. He proved to be both an excellent linguistic informant and an accomplished singer, and I wish to record my gratitude to him.

As a preliminary to the discussion of singing style in Lushai, a brief discussion of Lushai phonemes may be in order. Lushai phonology has been described by Eugénie J. A. HENDERSON,[4] and her 'systematic' transcription is equivalent to a phonemic notation. The distributional statements given by her, however, are not completely adequate in terms of Mr. SAILO's speech.

The syllable in Lushai may be defined as the sequence of consonants and vowels occurring with one of four contrasting tones. These tones may be written as follows: /ˊ/ high level; /^/ high-to-low falling; /ˋ/ mid level in syllables ending with a short vowel, mid-to-low falling elsewhere; /˘/ low-to-high rising.

1. The term 'tone language' is here used as defined by K. L. PIKE, *Tone Languages* (University of Michigan Publications, Linguistics, vol. 4; Ann Arbor, 1948), p. 3.

2. 'Speech Melody and Primitive Music,' *Musical Quarterly*, vol. 20 (1934), pp. 452-466.

3. 'Singing in Chinese,' *Le Maître Phonétique*, 3rd series, vol. 39 (April-June 1924), pp. 9-10.

4. 'Notes on the Syllable Structure of Lushai,' *Bulletin of the School of Oriental and African Studies, University of London*, vol. 12 (1948), pp. 712-725.

Lushai utterances begin with one of thirty-one contrasting consonantal sounds. Of these, seventeen are, relatively speaking, phonetically simple, and can be established without serious question as single phonemes: /b d g, p t k ʔ, v z, f s, l r, m n ŋ/. All the remaining initials, in spite of their greater phonetic complexity, may then be also interpreted as units, so that a syllable pattern with single initial consonant phoneme is recognised as prevailing throughout the language. We thus have aspirated stops /ph th kh/, sonorants with voiceless onset /hl hr hm hn hŋ/, plain affricates /tl tr c/, and aspirated affricates /thl thr ch/. It should be emphasised that digraphs and trigraphs such as /ph hl tl thl/ are used only for graphic convenience, and are intended to represent single phonemes in each case.

Of the contrasting syllabic elements which follow the initial, five are phonetically simple; these are the short vowel phonemes /i e a o u/. From this inventory, a pair of two-phoneme vowel clusters are formed: /ia ua/, pronounced as even-level diphthongs. Following this precedent, phonetically long vowels may be regarded as clusters of identical vowels: /ii ee aa oo uu/.

Syllable-final elements include the single consonants /p t k ʔ l r m n ŋ/ and the clusters /lʔ rʔ/. In addition, final semivowels occur, with or without following glottal stop: phonetically, [i̯ u̯ i̯ ʔ u̯ʔ]. If these semivowels are considered allophones of /i u/, the phonemic inventory is kept at a minimum, but clusters of three phonemic vowels must then be recognised in sequences like [iai̯ iau̯ uai̯]. If, on the other hand, the semivowels are considered as occurrences of phonemes /y w/, the phonemic inventory is increased, but the sequences /iay iaw uay/ can be accommodated in the same VVC pattern as /iap iam uap/.

The latter analysis is supported by the fact that the proposed phonemes /y w/ also occur as syllable initials—not at the beginning of an utterance, but internally, as a result of sandhi change. Thus /hnăay/ 'near' plus the question-marker /ʔěm/ is pronounced in slow speech as /hnăay-ʔěm/, but more normally as /hnăa-yěm/, 'is it near?'; /záaw/ 'wide' in a similar situation produces slow /záaw-ʔěm/ and normal /záa-wěm/, 'is it wide?'[5]

The present data differs from Henderson's in showing contrast between single (short) and double (long) vowels before syllable-final semi-

5. The proposed /y w/ remain in complementary distribution with /i u/ respectively. They are considered separate phonemes, however, following the principle given as follows by K. L. Pike, *Phonemics* (University of Michigan Publication, Linguistics, vol. 3; Ann Arbor, 1947), page 137: 'Two sounds are submembers of a single phoneme provided....that the total distribution of the submembers united into a single phoneme does not give a heavily nonsymmetrical result out of balance with the pressures of non-suspicious sequences in the language.'

vowels: thus /záy/ 'to cut', /sáay/ 'elephant'; /nèy/ 'to have', /ŋèey/ 'certain'; /sŏy/ 'to say', /sôoy/ 'to punish'; /hmŭy/ 'spindle', /hmùuy/ 'lip'.

In terms of the above phonemes, the Lushai syllable can be said to consist of a tone plus one of the segmental patterns CV, CVV, CVC′, CVVC′, and CVC″ʔ. In these formulae, C is any consonant; C′ is one of the voiceless stops /p t k ʔ/ or one of the voiced sonorants /l r m n ŋ w y/; C″ is one of the non-nasal voiced sonorants /l r w y/. To this statement only one exception has been found: a word meaning 'steep' is pronounced either as /ʔôoy/ or as /ʔôoyʔ/, where the second alternant introduces a pattern CVVC″ʔ.

The system of phonemic notation here proposed must be supplemented by one other symbol: the hyphen, indicating syllable division. This is not itself a phonemic feature,[6] but simply a device for distinguishing medial consonant clusters from the medial single consonants which are written with digraphs; thus /thlà-thár/ 'new moon' is distinguished from a hypothetical */thlàt-hár/.

It may be of value to compare this phonemic writing with the Roman orthography in use among the largely literate Lushai people.[7] This practical spelling, invented by Christian missionaries, ignores tone completely. Its symbolisation of the consonants and vowels is, however, fairly accurate. Most of the phonemes are written in the same ways proposed in this paper; the exceptions are *ṭ* for /tr/, *ṭh* for /thr/, *ch* for /c/, *chh* for /ch/, *ng* for /ŋ/, *ngh* for /hŋ/, no symbol for syllable-initial /ʔ/, *h* for syllable-final /ʔ/ (as well as for initial /h/), *i* for /y/, *u* for /w/, and *aw* for /o/. Phonemic double vowels are written with a circumflex accent, except when syllable-final and before semi-vowels, in which cases they are usually not distinguished. Syllable division is normally not indicated, so that a word like *chakai* /càk-ʔăay/ 'crab' could be mistaken for a hypothetical */cà-kăay/ or the like.

Two samples of Lushai singing may now be considered. The first is one verse of a modern song entitled (in conventional spelling) 'Mizo kan nih kan lâwm e,' with words and music by a composer named Rokûnga. The informant sang it from a song book entitled *Ṭhalaite Hla Bu* (Aijal, Welsh Mission Bookroom, 1952). The words are here recorded phonemically as

6. Syllable division is analyzed as a phonemic feature in languages such as Cantonese and Chiricahua Apache by Charles F. HOCKETT, *A Manual of Phonology* (*International Journal of American Linguistics*, vol. 21, no. 4, part 1; Baltimore, 1955), pp. 60-61.

7. This is the orthography used in James Herbert LORRAIN's *Dictionary of the Lushai Language* (Bibliotheca Indica, Work No. 261), Calcutta, Royal Asiatic Society of Bengal, 1940.

pronounced when spoken rather than sung. The melody has been transcribed, with the help of my colleague E. C. Dimock, in terms of notes of the treble staff. Notes of the lower octave are underlined. Sharps and flats are indicated by plus and minus signs respectively. The length of each note is indicated by a fraction following it; a raised dot after a fraction indicates an added half length. Diagonal lines indicate bar divisions.

*C*⅛/*F*¼· *F*⅛ *F*¼· –B⅛/C¼· A⅛ *F*¼· –B⅛/A¼· A⅛ –B¼· A⅛/*G*¼·
mì zów kăn nìʔ kăn lŏo mè kăn tláaŋ ʔà thíaɒ bók sĭi

C⅛/*F*¼· *F*⅛ *F*¼· –B⅛/C¼· A⅛ *F*¼· –B⅛/A¼· *F*⅛ G¼· G⅛/*F*¼·
kăn ríl rûu pó? ʔà sáa ŋè kăn hmíɒ ʔà tháŋ bók sĭi

*E*¼ / *E*¼ *E*¼ *F*¼ *E*¼ / *E*¼ *E*⅛ *D*⅛ *F*¼ / *G*¼ *G*⅛ *F*⅛ *E*¼· *D*¼ / *C*¼·
kăn rám kăn hnăm dìn chùaʔ náan thìn lúŋ tì thíaŋ hlí mín

C¼ / *F*¼ *F*¼ *F*¼ C¼ / C¼ C⅛ A⅛ *F*¼ *G*¼ / A¼ A⅛ *F*⅛ *G*¼ *G*¼ *F*½
kăn húai kăn fĕl kăn fîn ná tè thìa mín ʔì hmáɒ ʔàŋ ʔù

A free translation runs as follows: 'We are glad that we are hill people. Our hills are pure, our minds are high, and our name is known. For the welfare of our country and community, purifying our hearts, let us use properly our bravery, our knowledge, and our wisdom.'

A comparison of lexical tones with song pitch in this material shows no particular agreement between them. Thus, in the first line, the rising-tone syllable *kăn*, *lŏo*, and *sĭi* are sung with level or falling pitches. The only falling-tone syllables of the song, *rûu* (line 2) and *fîn* (line 4), are both sung with level pitches. The falling pitches which are sung in the first two lines replace lexical tones which are rising and high.

This lack of correspondence might, perhaps, be expected in modern Lushai songs, which, like this one, are strongly influenced by Occidental music. It is also possible, however, to examine a 'old song', one which presumably antedates contact with the West. Such a song is the following:

*D*¼ *D*¼ *D*¼ *G*¼ / B½· –B¹⁄₁₆ B¹⁄₁₆ / –B¼ B¼ A⅛ *G*¼·
hmăa nàʔ cúan khúa hmùn ʔà léeŋ kăn nĭi

/*D*¼ *G*¼ B¼ B¼/A¼ *G*¼
ʔà léeŋ kăn nĭi

*D*¼ *D*¼ *D*¼ *G*¼ / *G*¼ –B¼ B⅛ –B⅛ *G*¼ / B¼ B¼ B½
tŭu nàʔ ʔé rŏʔ ʔàan nêem tháŋ hnîaŋ kăn káa ràʔ

B¼ *D*¼ B⅛ –B⅛ B⅛ A⅛/ *G*¼ B¼ B¼ A¼/*G*¹⁄₁
múal zà pŭy ʔìn mĭn lŏo dăŋ tàa ʔè

$D\frac{1}{4}$ $G\frac{1}{4}$ $C\frac{1}{2}$ / $C\frac{1}{2}$ $A\frac{1}{4}$ $A\frac{1}{4}$ / $B\frac{1}{4}$ $B\frac{1}{4}$ $A\frac{1}{8}$ $G\frac{1}{4}\cdot$ / $G\frac{1}{4}$ $A\frac{1}{4}$ –$B\frac{1}{4}$ $A\frac{1}{4}$ / $G\frac{1}{1}$
ˀôy ˀôy ˀôy..... ...ˀà léeŋ ˀêem mǎy ˀôy ˀà léeŋ ˀêem mǎy.

A free translation is: 'In the past we lived, we lived in the same village. But now between us faithful friends a great obstacle has come. Alas, alas, what longing, what longing!'

Comparison of the two systems here again shows a lack of correspondence. Of the eleven rising-tone syllables in the song, for example, ten are sung on even pitches and one on a falling pitch. The seven falling pitches of the melody replace three mid-to-low falling tones, two high–level tones, two rising tones, and one high-to-low falling tone.

It thus appears that the sacrifice of lexical tone to song pitch is not a new phenomenon in Lushai singing, but may well be aboriginal. Since differences of tone serve to distinguish meaning in Lushai,[8] we may wonder whether the complete distortion of lexical tone in singing makes it difficult to understand the words of songs. The informant's answer is, 'It is not difficult for us.' That is, the tone contrasts of Lushai may be completely obliterated without seriously obscuring the meaning of sentences—a sign of the language's redundancy. To quote Hockett,[9] 'This redundancy implies that, most of the time, a certain amount of distortion, added to the message at one point or another along the route it follows, leaves the message still intelligible.'

8. As in *púm* 'whole', *pûm* 'to ripen,' '*pùm* 'belly,' and *pǔm* 'splash'.
9. *A Manual of Phonology*, page 214.

"SAMSKṚT '*KAVA-*' AND RELATED WORDS"

By

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Under the title "Saṃskṛt *kava-* and related words"* T. Burrow (the well-known author of the excellent book "The Saṃskṛt language") has followed up a study made by H. W. Bailey in "Transactions of the Philological Society," 1954, pp. 144ff.—where the latter draws attention to an Indo-Iranian base *kav-* : *ku* "to be small".

1. Burrow's *Explanation.*

The study of this base and its applications and derivatives in Saṃskṛt gives T. Burrow the opportunity of throwing abundant and new light on a host of Saṃskṛt words. I shall list here the chief ones so as to excite the reader's curiosity towards his masterly treatment of this particular problem:

1. *kumāra, komala*
2. *kavapatha, kavāgni, kavoṣṇa*
3. *kava-tiryañc-, kavāri, kavatnu-*
4. *akava-*
5. *ku-* as first element in many compounds
6. *kad-, kā-, kim,* as first element of compounds
7. *kubja-* vs. *urubja-*
8. *akūpāra-* vs. *pūrtam, pūrti-*

Burrow's brilliant analysis and his thorough and wide-ranging gathering of all relevant facts yields a fine harvest of new and illuminating results, as the interested reader will find for himself.

My purpose is to try and throw further light on one particular point: the use of *kā-* (*kad, kim*) vs. *ku-* as first element of compounds.

Burrow's explanation, with which I, on the whole, fully agree, is:

(a) *ku-* has nothing to do with the interrogative pronoun; but belongs to this base and root: *ku* : *kava.*

* *Chatterji Jubilee Volume* of Indian Linguistics, 16, 187-193.

(b) Its original meaning is "small", *not* "bad"—but the pejorative meaning is semantically derived secondarily over "too small, mean, inadequate, deficient", as testified by examples and their meaning.

(c) The use of interrogative pronoun forms as pejorative prefixes, similar to *ku-* is to be explained as a purely *Indo*-Āryan analogical development, due to "the homophony existing between *ku-* "little, poor" and the interrogative *ku-* (in *kútra, kúha,* etc.). Confusion between these two, and connecting them whether consciously or unconsciously, led to other forms of pronominal stem being used like the pejorative *ku-*. The commonest form so used is the neuter *kad-*, and in this case, there was obviously a striving to avoid using *ku-* before vowels, because in that case it would lose its syllabic quality. The feminine *kā-* is much less frequently used and tends to carry with it an additional idea of effeminacy, as in *kāpuruṣa-*. The neuter *kim* is laid down in P. 2, 1, 64 to be so used in the sense of blame, but it is only very sparingly so used".

2. *A more complete solution.*

It is the anomaly of the use of the *feminine kā-* that should arouse our suspicions and lead us on to find a more complete and satisfactory solution to this problem. Burrow's implied explanation (that its use was connected with the fact that it tended to carry an additional idea of effeminacy) is not satisfactory, since his very example ("kāpuruṣa") indicates that this idea comes from its being associated with "puruṣa". In a patriarchally-minded culture a deficient man is a womanish man almost necessarily.

I think we shall be on the right path if we take into account both the historical and the linguistic-phonetic aspects of the problem.

(a) *kā- vs. kava-*

The starting point is one word that is most likely to be the same—only represented in two different historical and linguistic phonetic stages: *kavapatha*: *kāpatha.*

Kavapatha is attested by Pāṇini as occurring in a (now extinct) *vedic* text, but *kāpatha* is evidently taken from the *later* śiṣṭa language which was already being penetrated by MIA (Pāli-prākritic) phonetic developments—one of the chief and earliest ones being the weakening of intervocalic *- v - y -* (as witness the *ṛgvedic* intruder *prauga!*). This, in conjunction with the presence of the labial *-p-*, would naturally lead to an assimilating influence —giving a living word, as pronounced: *kavapatha*: *kaa(v) patha*: *kāpatha.* And since the other chief word is *kāpuruṣa* and it offers the same phonetic conditions (reinforced by the presence of the *u*-vowel after the *-p-*), we can

all the more find satisfaction in the process: *kava-puruṣa*: *kaa* (*v*) *puruṣa*: *kāpuruṣa*. And this finds full confirmation in the next example: *kavoṣṇa*- (an old sūtra word) vs. *koṣṇa;* where the dissimilating influence of the u-tinged *-auṣṇa* : *oṣṇa*, on the one hand retained (in the *literary* language) for a time the syllable value of *kava-uṣṇa* while on the other, the popular trend went the whole hog towards pāli-prākritic *koṣṇa* (over *kauṣṇa*). That the last example of the series also confirms this explanation should not be difficult to see: *ka* (*v*) *akṣa*: *kaăkṣa*: *kākṣa*—where the following guttural was an extra help for the disappearance of the *-v-*.

(b) *kad- vs. kava- and ku-*

Since the above explanation is complete and satisfactory, we can take a step forward and examine the case of the compounds with *kad*. Leaving aside the formerly mis-interpreted *kad-artha* (of X, 22, 6), we have an old vedic *kava* + *ari*: *kavāri* and *akavāri* (together with *akava*) protecting the trisyllabic-pronunciation of the similar **kavārya*- which we can safely assume, since the very existence of *kavāri* and *kavākṣa* and *kavoṣṇa* shows the artificiality or lateness of Pāṇini's rule about the substitution of *kad* for *ku* before vowels. The trend of the *old* language was rather to substitute *kava* for *ku* in such a case: that is shown both by the old examples studied above and by the natural striving for clearness to keep the two elements distinct—as against the trend towards a kṣaipra-fusion: hence *kavāri*, not *kvāri*, etc.

So, on the one hand, the similarity in sense and sounds with *kavāri* tended to keep *ka* (*v*) *ārya* vs. *kārya* (which would be the natural evolution of the word in the *spoken* language) trisyllabic, and on the other hand the presence of the homonymous "kārya" must have worked for a dissimilation of the two. Hence the hiatus-state *ka* (*v*) *a*: *kaărya* (which would naturally tend to equalise the two vowels) must have worked towards a hiatus-bridging *ka* (*y*) *ărya*, which was then resanskriticised as *kadarya*—since any reconstruction as *kă* (*ḥ*) *ărya*—would have meant a *kórya* (unexemplified elsewhere in the language), while a *kim-arya* would have meant a different word. On the other hand the very existence of the word *kad-artha* and *kad-vat* in ancient texts must have supplied the necessary support and analogy—together, *above all*, with the analogical formations already accepted in *kāpatha kāpuruṣa*, etc., which made an interrogative-like first element acceptable.

(c) *kim- vs. ku-*

This was reinforced by the case of *kiṃpuruṣa*. Here we have to start from a natural doublet of *kava-puruṣa*: *ku-puruṣa*. Such a word would, in the *living later* language, give a "ku (ṃ) puruṣa"—which is phonetically-linguisti-

cally, it seems to me, a "natural"; and then the -u- between a *k* and (*ṃ*) *pu-* would become indistinct enough to suffer the influence of the many words of the language compounded with *kim-* (beginning with ṛgvedic *kimyu*, *kimmaya*, to say nothing of *kimcit* with its trend to a depreciative meaning) while there was nothing in the language to help an initial *kum-*. Add to this the obvious likelihood that a living trend to dissimilation (of the *three consecutive* -u-) would operate: whence *kiṃpurusa* for *ku* (*ṃ*) *purusa.*

On the other hand, it is natural to expect that the *spoken* language would have such doubles *kavapuruṣa*: *kupuruṣa*, since *kava* was dying out, while *ku-* remained a living and lively factor in the further development of the "śiṣṭa-bhāṣā". Hence the double occurrence of *kāpuruṣa*: *ku* (*ṃ*) *puruṣa-kiṃpuruṣa* and the others pointed out above. (Cf. also *kāpatha*: *kavapatha* vs. *kusṛti*). Moreover, in the case of *kiṃpuruṣa* the tendency to assimilate it to the interrogative pronoun must have been practically irresistible, owing to the simultaneous existence of what looked like an obvious feminine parallel in kā-puruṣa; so much so that even without any other linguistic-phonetic trend at work this would be the likeliest explanation in this particular case. But the palatal trend of saṃskṛt gutturals in general will also have partially helped.

With all the above cases at work on the analogical feeling of the developing language, the only other case in older vedic texts is easier to explain: *kiṃśila-* "having small gravel-stones". On the one hand, if the original was *kuśila-* a pronunciation *ku* (*ṃ*) *śila-* with an assimilatory trend to *kiṃśila* would be quite on the cards. But two further factors would naturally operate towards the same change: *first*, the desire to differentiate it both from *kuśala* and from *kuśīla*; *second*, the fact that, as the language developed, the meaning of *ku-* as "small" was disappearing and only the meaning "bad" was alive. Now it was *non*sense to call a field that had *only "small"* stones (*original* meaning of the word) a *"bad*-stone-filled" one; for, having *small* stones, it was rather praiseworthy than censurable; while the substitution of *kim* allowed the word to be classed among those that contained the *merely depreciating kim* of the later *kiṃpuruṣa* sort, which meant "having no stones worth considering". Hence this seems to be a wilful remodelling of the word under the influence of the semantic evolution of *ku-*, besides the analogical and other possible reasons indicated above. (And this applies also to *kiṃpuruṣa-*).

3. *A word on the right method*

In the course of the above essay, I have tried to show in actual practice the method of studying the phenomena of Saṃskṛt as *living-phonetic-linguistic facts.* For it is my deep conviction that the study of

Saṃskṛt, not as a literature but as a language, has been too much under the spell of the mere *written-printed* word—forgetting often, to its own undoing—that Samskṛt is primordially an *oral-auricular* fact and that the MSS or books, *especially in the oldest stages,* are only representations of an *oral-living* reality. This in India and with regard to Saṃskṛt is, if anything, more true than in the case of practically any other language. We have always to break through the *written letter* to the *living speech* behind: through the dead *lipi* to the *living śruti.* The unifying simplicity and thorough covering of all the recorded facts in a satisfactory manner should be a further recommendation for this explanation: *ku-* : *kav- plus* the *living* language explain everything.

4. *A Confirmation in point.*

In an article in Indica (Silver Jubilee Volume of the Indian Historical Research Institute, Bombay, 1953) this writer gave the outline of the new approach to a text-critical reconstruction of the Ṛgveda Saṃhitā on which he is preparing a work for the near future. It is based on the *fact* indicated above that the ṛgvedic text must be viewed and weighed (as *against* the *epic* texts!) as an ancient *living oral-rhythmical* literary product re-edited by much *later mere-grammarians,* whose own *living* speech had evolved, *towards* Pāṇini and *away* from the ṛṣis, to a very large extent. The Saṃhitā is thus a *palimpsest:* This, in itself is no new discovery; but the ruthlessly logical application of its corollaries leads to astounding results. Let us give a sample.

(a) *"kavā-sakháh" (hap. leg.) and its lessons.*

The ṛgvedic words around *kava-* (connected with the above problem) include, besides *a-kava-* (5 times), the forms *kavā-sakhaḥ* (once), *kavāri-* (once) and *akavāri-* (twice). What *akavāri* is should be clear from another precious (*hap. leg.*) relic: *bṛhad-ri* hence it is *a* + *kava* + *ri.* Therefore the original form is really "akavari" and the lengthening of the *ā* in *-va-* is a mere rhythmical one, subject (*for the ṛsi-kavis!*) to the exigencies of rhythm and metre. In the case of *kavā-sakhaḥ* it is *demanded* by its metrical position (V, 34, 3): (I transcribe the texts restoring diphthongs, visargas, kṣaipras and the yati-avasānas. + means saṃdhi):

(a) yá(ḥ) asmāi ghraṃsái uta vā yá(ḥ) ū́dhani
(b) sómaṃ sunóti bhávati dyumā́ṃ áha
(c) ápāpa śakrá(ḥ) tatanúṣṭim ūhati
(d) tanū́śubhraṃ maghávā yáḥ kavāsakháḥ

But any novice in ṛgvedic metrical lore (as we indicated in our article referred to above) can detect the redactorial touches here, while the real expert will further see the principles that led the redactors to change the true ṛṣi original which *must* have been (as we shall more conclusively show in our coming work):

(a) ghraṃsai ya(ḥ) asmāi uta vā ya(ḥ) ūdhani
(b) somaṃ sunoti, dyumaan bhavăti saḥ
(c) apa + aha śakraḥ tatanustim ūhati
(d) tanūśubhraṃ maghavā + i(ṃ) yaḥ *kavāsakhaḥ*

That the *redactor* wanted his *yaḥ* in the *regular-normal* initial position in pāda-a (though it kills the initial rhythm, so beautifully exemplified in pāda-b)—is clear; and so is too that the *yaḥ* in *a* demands a *saḥ* in *b;* but the *redactor* has lost the living use of the vowel-resolution and the rhythmical lengthening in *dyumān + bhavati,* and cannot make a decent jagatī except with the "clever" changes he makes in words and their order. As for c, the same redactor, who has lost the freedom of rhythmical lengthening, *would* necessarily shun an initial *apa + ha,* and besides would want to avoid the possible misunderstanding (*apāha*)—hence the easy trick of repeating the preposition *apa* and avoiding the tabu-beginning of a pāda with 3-*hrasvas!* But it is also equally likely that the redactor had either misanalysed *apă + ha* as *apa + aha,* or (as we have assumed) still more likely that he actually had an original *apa + aha,* from which he borrowed his "aha" for the editing of the, for *him* faulty previous pāda b. This makes us rather prefer *apa + aha,* at least provisionally. Finally the deictic *i(m)* in pāda *d* gets lost in a reciter's haplology with the adjoining *yaḥ.* But the meaning and the position of the words simply *demand* it unquestionably.

All this seems unnecessary—and it is so, as far as the mere pivot-word *kavāsakhaḥ* is concerned; but it paves the way for the next step. For it shows quite blatantly how the redactor *is* led by his grammatical preconceptions (born of a *later* linguistic stage) to *edit* the text—just as we all *know* incontrovertibly that he *did systematically* do in countless cases with the *samdhi* conventions. And this logically makes him guilty (*on principle!*) of *such-like* tamperings, the moment he can be suspected of meddling with the *rhythm-pattern* or with *archaic speech trends.* The benefit of the doubt is *for* the *archaic ṛṣi—against* the redhanded *later*-day meddler that the *saṃhitā-kāra is proven* to be.

(b) *The influence on the "(a)-kavāriḥ" group*

Now, for the next step, the first thing to note is that the above *kavāsakhaḥ* is the one and only (*hap. leg.!*) compound with *kava-* which occurs

in the *family*-books besides our *akavāri* (twice only), and that the *only* other compound with *kava, kavāri,* is an *hap. leg.* in X, 107, 3. The second thing to notice is that, wherever it occurs, *akavāri* or *kavāri* invariably *breaks* the rhythm-pattern, *if* taken as *written* in the saṃhitā—while if it were written in the etymological way, *a-kavă-ri,* it would be, on the one hand, *unbearable to the saṃhitā-kāra* (because it always would involve *for him* a taboo 3-hrasva beginning of pāda—which he will only accept *à contrecoeur* when all his tricks fail to produce something rhythmically better!) but perfectly *viable to the ṛsi-kavi,* who would most *naturally-normally* make use of the ancient rhythmical lengthening and read *a-kăva-riḥ,* thus giving a perfect initial rhythm.

Therefore, it is absolutely certain (and we shall further confirm it in our coming work with innumerable cases scattered over the whole saṃhitā) in the light of what we have said above that the *saṃhitā-kāra* has followed that *analogical trend* so well exposed by OLDENBERG (especially in its, so often and obviously, completely mistaken and even foolishly misguided applications): he has made of the *correct kavā-sakhaḥ* his model for a rhythmically impossible (in situ !) *a-kavā-ri* — in order to avoid, on the one hand, an archaic form (*akăvari-*) which was against *his* speech-habits, and, on the other, a "correct" form (*akavari*) which would deform *his* (traditionally preserved !) rhythm-pattern in a *major* way. His "correction" leaves only a, for him, *minor* ārṣa blemish: a pādá beginning with *two* (only!) *hrasva*-syllables. The latter he *has* to grin and bear, because no amount of redactorial juggling with the actual archaic text can allow him to escape *that* (and even much worse things in *extreme* cases)—owing to his traditional materials and the *partial* conservatism of his milieu, *and* to his *later*-day, sacrosanct, grammatical preconceptions and conventions. There is one more force at work that helped the redactor: the levelling trend (*also analogical !*) in the *living* speech that tended to stabilise certain lengthenings in the *daily* language, as against the *literary,* more *archaic* one. For instance, *kavă-sakhaḥ* would tend to be stabilised as *kavāsakhaḥ,* because *that* rhythmical lengthening would fit always in whatever *prose*-position the word might happen to be, and, besides, it would be supported by the many other stereotyped lengthenings of the *last* syllable of a *first* member of a *compound.* But a *kavi* could say *a-kăvasakhaḥ, ăkavăsakhaḥ, a-kavăsakhaḥ* by a free-archaic application of the "Dehnungsgesetz" (which needs a formulation very different from that of Wackernagel's, as we hope convincingly to show in our work). Hence *a-kavāri* may have slowly become fixed-crystallised in the *living prose*-language of the saṃhitākāra, and, hence, facilitated his editing the ārṣa text with an easy conscience.

(c) *The "(a)-kavārī" texts reconstructed*

With this in mind, it will now be easy to see that the original text of the passages here concerned must have been:

III. 47, 5:

(a) *marútvantaṃ* vṛṣabháṃ vāvṛdhānáṃ
(b) *ákăvariṃ* diviyáṃ śāsám índraṃ
(c) viśvāsāham ávasai nū́tanāya
(d) ugráṃ sahodāṃ ihá táṃ huvaima

That the kavi who has wrought out such perfectly rhythmical pādas a+c+d, should, of a sudden, go in for an *akavārim* in b, is simply an insult to our ancient ṛṣis — and calling it "ārṣa" is just adding insult to injury, while, at the same time, committing text-critical (and rational) harakiri. No less! (There is one more fundamental reason why we feel certain of the above — but we shall come out with its full weight in our coming work. Yet it is stamped on the above text and on the whole saṃhitā so boldly that he who runs may read.) The word "viśvāsāham" is worthy of note, since it is one of those which (being originally an *a-luk* "viśvā (-ni) sāham" or its equivalent) gave rise to the kavis' freedom in lengthening the last syllable of the first member of a *compound* even *beyond* the limits of the normal 3-*hrasva* position.

X. 107, 3:

(a) dāívī pūrtíḥ dákṣiṇā daivayajyā́
(b) ná *kăvaríbhyah,* na *pṛṇánti* taí hí
(c) *áthă* náraḥ prá-yatadakṣiṇăah
(d) avadyabh*īṣā́* bahávaḥ *pṛṇanti*

Again, here: that the kavi who wrought out a+c (with such an obvious and perfect use of the rhythmical lengthening in c: *athă naraḥ*) should fail in the rhythm of *b*, is simply unthinkable; and so is that, in that same pāda, he should try to fill his metre with the double-termination *-āsas* (which we shall *prove* to be a slick *redactional trick* of the ṛgvedic saṃhitā-kāra's — *among many similar ones!*) when he had at his disposal *his* normal vowel-resolution *and* rhythmical lengthening: *dakṣiṇăaḥ*. (How the *ṛṣis* must have turned in their graves at such bold tamperings!) Again, that a *kavi* should end two pādas in the *same* stanza with the *same* word in the *same* meaning, *when* the rhythm allows him a variation, as shown above in *b* — no, surely! But for the pedestrian grammarian of a saṃhitā-kāra, the "usual" *prose* order is more natural, and he prefers it, since he can manipulate the words so as to heep the rhythm-pattern — but

so can *we*, to āvoid monotony, as we did above, and so (only more so!) could and *would* a self-respecting *kavi!* Finally the rhythm-murdering "avadya*bhiyā*" is obviously a redactorial modernisation-analogy to avoid the obsolescent (3 times only!) *bhīṣā* (which later on is used as a *nom.* singular *fem.!*) *Or* could we think of a "short" instrumental "abadya-bhĭi" with vowel-resolution and rhythmical lengthening, *or*, simply, of a *bhvr.* "avadya-*bhīyăḥ*" with an, in *that* case, also legitimate rhythmical lengthening?

The increasing weight of the accumulated redactorial indications above almost irresistibly points to the real kavi-original of the most important and final passage of this series:

VII. 96, 3:

(a) *bhadrā́* (*y*)*i* bhadrā́ṃ kṛṇavat sárasvatī

(b) *ákāvariḥ caitad i*(*ṃ*) vājínīvatī

(c) gṛṇānā́ jamadagnivát

(d) stuvānā́+uta (?) vasiṣṭhavát

That the real *ancient* word to be expected in *b* is, *akāvaris* (with the *double*-purpose (masc. + *fem.*) *-iḥ* termination of the one-and-only word known in *all* the other occurrences of *-riḥ!*) should be evident, as also that the redactor *would* make it into an ī-terminating *fem.* To this he would be led by all *his analogical* trends: *first*, that in *all* the other cases -riḥ is *actually* used for *masculines; second*, that in *this* text it is surrounded by ī-ending *feminines* (besides the -ā ones, also *exclusively* feminine!); *third*, that the *reciters* before him had most likely already fallen into the same trap, both by analogy, propinquity (to the *immediately* preceding *sarasvatī!*) *and* by an almost natural *assimilating haplology* (*iścai: -ī*(c)*cai-: īcai-*). The latter would be made easier still by the fact that the *yati* in its most ancient form made a real *avasāna with never a saṃdhi over it*: hence *akavariḥ cai-* would still more irresistibly lead to *-rī*(*ḥ*)*ca-:-rī ca-!* On the other hand, that the deictic *im* in *b* (obsolescent as it is!) would be made into a single word with the *injunctive "caitat"*, owing to its accentlessness, is but natural; as also is that the trend to saṃdhi (*caitadim*) should be reversed (by the reciters *and* redactor) owing to the presence of the adjacent *-ta* and the haplological absorption of the anusvāra (in i-ṃ) into the adjoining *vā-*. But the force of the parallel accompanying subjunctive-imperative *kṛṇavat* in *a* is an unmistakable pointer in that direction, (though, absolutely speaking, it *could* also be an augmentless imperfect). The reason why the redactor *had* to change the original *bhadrā i bhadram* into the rhythm-slaughtering *bhadram id bhadrā* is because for *him* the reciters' *bhadrāi* : *bhadre* had *normally* to be considered as *bhadrā + id + bhadram* — and *then* to be shuffled, because else

he will *have* to make a saṃdhi *and* lose one syllable! But the *kavi* could keep the two syllables even more easily-naturally than when freely using his well-known vowel-resolution in the gen. pl. *-aam!* And how obvious it is here that *bhadrā (i) bhadraṃ kṛṇavat sarasvatī* is *the* natural and most appropriate order for the two *bhadra*-forms! Finally the use of *ca* in d, though not impairing anything in sense or rhythm, is suspect of redactorial *tidying up,* (both *for clearness* and *against* possible misunderstandings) from an original:

"stuvānā + uta vasiṣṭhavat"

— which might easily sound like "stuvā nă + uta" or some such barbaric-nonsensical thing. Grammar and sense always take precedence over mere text details (especially if uninmportant or *only* archaic) for the *redactor!*

5. *Results for ṛgvedic text-criticism*

The results of the above study involve an almost complete revolution in ṛgvedic text-criticism. We hope shortly further to prove every implication to the hilt — though the above samples should carry sufficient conviction to subject the method here employed to a full test as a working hypothesis of solid standing. That this will lead to a thorough and far-reaching reshaping of what even giants (like OLDENBERG, WACKERNAGEL and GELDNER) have had to say will appear to any thoughtful ṛgvedic scholar — but it will also lead to a very *full restoration of our ancient glorious ṛṣis to the place of honour as kavis* that has been systematically denied them from the days when the saṃhitā-kāra first threw upon their poetic creations the *māyā-jāla* of his semi-Pāṇinian grammatical-pedantic obsession.

As an earnest of those results we have here:

(i) the restoration of the real ṛṣi-kavis' text in the several key-stanzas above;

(ii) the real meaning and form of *kava-riḥ a-kava-riḥ* (which should be *thus* entered in GRASSMANN);

(iii) the fact that the feminine *a-kavarī* did *not* exist in the ṛṣis' language;

(iv) the first foundation-stone of the proof that the ṛṣi-*kavis* are *never* at fault in rhythm *and* that *all* rhythmical faults are the work of a *later redactorial hand* — the saṃhitā-kāra's!

N.B. (1) The correct rhythmical use "in situ" (by the Saṃhitā) of *tavā-gāḥ, turā-ṣāḥ* vs *tură̄yāḥ, tură̄-gātu* confirms the above explanation *tavā̆-riḥ.* — (2) The possible origin (cfr. MAYRHOFER) of "*kiṃnara*" (as the basis of *kiṃpuruṣa?*) from an archaic *semitic loan-word* also confirms our main findings above. — (3) A *haplology could* also explain VII, 96, 3a; "bhadrā bhadraṃ kṛṇ*avat*+*tat* sarasvatī".

THE LANGUAGES AND DIALECTS SPOKEN IN ORISSA

By

G. B. Dhall, *Agra*

Oriya, one of the major Indo-Aryan languages spoken in the state of Orissa, is one of the fourteen languages recognised by the constitution of India. Beyond the borders of Orissa, this language has many speakers distributed in the states of Behar, Bengal, Madhyapradesh and Andhra. Oriya is the anglicised form of the real name Odia [Oṛia] which is so called on account of its being the language of Odra which is an ancient name for the country known to the English as Orissa. Outside Orissa the name is mispronounced by many people as [uṛija].

Orissa fought long against the foreigners and came very late under British influence and later still under the British system of education. For many years the administrative machinery was manned by people from outside, who almost formed a part of the people of the State. The process of linguistic integration is going on even today although for very different reasons on a much larger scale than ever. Major projects like the Hirakud Dam project (one of the biggest in Asia) and the Raurkela steel plant project contribute very greatly towards linguistic inter-mixture. The refugee settlements have also created linguistic pockets in this State as elsewhere. For several of these reasons Orissa has been and is a home of many languages and dialects a short account of which is provided in these few pages. This little essay may interest people who deal with dialect standardisation.*

Besides Oriya, which is the recognised language of the State, a number of other languages of secondary importance are also spoken in different parts of the State. For reasons not connected with linguistics, Orissa has been a place of residence for many non-speakers of Oriya who speak some or other of the Indo-European or Dravidian languages. As will be clear from the last census one-fifth of the State's entire population consists of tribesmen who speak a number of languages which possess no records. The languages spoken in Orissa may conveniently be classed under three well recognised language categories, viz. Indo-European, Dravidian and Austric.

* This was discussed in a seminar in the Poona School by an American linguist friend Uriel Weinreich interested in problems of dialects and standardisation.

Among the Indo-European languages we have Oriya, Bengali, Hindi, Gujarati, Marwari, Chattisgarhi and a foreign language English. Tamil and Telugu of the Dravidian group are spoken mostly on the southern border of the State. The Austric group consists of languages like Bhumij, Bhuyan, Gond, Gadba, Ho, Kondh, Kol, Kui, Kisan, Laria, Munda, Mundari, Orang; Patua, Saura and Santali.

As elsewhere in India, the educated people of Orissa speak English as their second language. Since the inclusion of Hindi in the school curriculum and introduction of Hindi films for entertainment many people get scope to learn and speak Hindi with ease. Even without training in Hindi and Bengali, the educated people can instinctively understand them and can speak both languages without strict observance of grammatical rules. In several parts of Orissa men with very little or no education can smatter a few words or phases in Hindi and Bengali. There is a common saying that an Oriya speaks Hindi when he gets angry. The Muslims though small in number speak Urdu in their homes and Oriya outside. It is interesting to note that the Pandas of Puri can speak any Indian language with ease because of their intercourse with visitors to Jagannath Puri from different corners of India.

The standard Oriya language, which is the language of books, of people at the University and in the office can be understood by Oriya people throughout the State inspite of the preponderating dialectic variations on the borderlands. Uptil now no survey of the dialects of Oriya has been undertaken nor is there any literature giving details in the matter. But then reference may profitably be made to some of the well-known dialectic variations of the standard language in the borderlands and in the heart of the underdeveloped Garjats which were until 1947 cut off from British Orissa as feudatory administrative units.

The people of the Garjats and those of the coastal districts of Orissa can be broadly divided linguistically into two major categories by reason of difference in intonation. The speech pattern of the people of the Garjats is still considered with some prejudice.

One of the very important dialects is Sambalpuri (the language of Sambalpur) spoken in the district of Sambalpur and in the neighbouring districts of Sundergarh, Kalahandi, Balangir and Bauda. It is a mixture of Sanskrit, Oriya, Hindi, Chattisgarhi and many other languages of the Austric group. This dialect is particularly interesting because of its vocabulary highly mixed up with the words of the tribal languages. It is interesting to note that though Sambalpur is far away from the Ganjam agency and the district of Koraput yet there is a high degree of similarity in the words

and their formation in the language of Sambalpur and in that of Ganjam and Koraput. This is because of the fact that Sambalpur in the West and Ganjam and Koraput in the South are chief centres of tribal culture. The languages of the coastal area are exposed to the influence of foreigners like the Muslims, Moguls and the Europeans particularly the English. The Sambalpur area being far away from the coastal districts was not so much exposed to foreign influence as is met within Balsore. But then for a long time included in Madhyapradesh, politically and socially cut off from the coastal Orissa, Sambalpur developed a language on very different lines. The characteristic difference of Sambalpur from that of the standard language lies in its very sweet musical intonation. The dialect is rich in folk songs and poetry but there is very scanty written literature. The people of Sambalpur are rightly proud of their linguistic heritage and an attempt however small is now being made to bring the language into print. Some scholars of Sambalpur refuse to accept Sambalpuri as a dialect but a separate language next to Oriya. They claim for Sambalpur dialect a position that Maithili possesses among the Behari group of languages.

The type of Oriya that is spoken in North Balsore, in some parts of Mayurbhanja and Midnapore can be treated as dialectal. It is greatly influenced by Bengali language. Illiterate people in those parts speak a language in which a sentence may begin in Oriya and end in Bengali or vice versa or a sentence may thoroughly be saturated with corrupt Bengali grammatical forms. The influence of Bengali is so predominant on the northern borders that small Oriya books popular among the common masses are written in Bengali characters though the language is Oriya. It may be remembered that for a long time Orissa formed a part of Bengal also.

A form of Oriya language spoken in South Orissa particularly in the districts of Ganjam and Koraput is a Telugu mixed version of Oriya, both the vocabulary and the intonation of which are very peculiar. The difference between standard Oriya, Sambalpuri and Daksini (of the south) is so clear cut that they can be distinguished without effort. Many Oriya people in the border land speak Telugu as freely as they speak Oriya.

For a pretty long time the district of Ganjam formed a part of Madras where the Oriya speaking people were compelled to study Telugu along with Oriya. It is therefore no wonder that about fifty percent of the common Oriya words have Dravidian roots which is difficult to realise without proper linguistic outlook. But then the Dravidian languages are in essence so different from the Oriya language that even after hundreds of years of intercourse they have not influenced Oriya language in the way Bengali has influenced in the North and Hindi in the West of Orissa. It is rather interesting to notice that for about two hundred years Ganjam remained the centre of

Oriya literary culture and a number of outstanding figures like Gopal Krishna, Kavisurya and Gopinath Nanda had sprung from that dialectal area.

It is interesting to note that most of the tribesmen of Orissa inhabit the jungles of the Orissa Garjats and the districts of Ganjam, Koraput and Sambalpur. Among the Garjat areas (so called before the merging of the princely states in 1947) Mayurbhanja, Keunjhar, and Sundargarh are largely inhabited by the tribesmen. Alongside other important tribal languages, Mundari and Santali are spoken in Mayurbhanja and Saura, Kondha, Gadba and Paraja in Koraput. None of these languages possess any literature. Thanks are due to Christian missionaries who have worked on their languages, however crude the method may be. It is for the first time in the linguistic school of Poona that some Indian Linguists including the writer with the help of Dr. John GUMPERZ, an American Linguist have just made a beginning in the scientific analysis of Mundari one of the important tribal languages. One outstanding Oriya novelist Sri Gopinath MOHANTY has interested himself in the life and the language of the tribes people of Ganjam and Koraput. The Government of Orissa are making attempts at the anthropological study of the tribal people. The study of their languages is essentially necessary for the proper understanding of some aspects of Oriya language itself. Most of the tribesmen living on the borders of the Hindu villages understand and speak some sort of dialectal Oriya and influence it.

An account, however small, is given here of the chief tribal tongues distributed over the hills and dales of Orissa. Santali is one of the major tribal languages spoken by the largest number of tribal population of Orissa. They are concentrated in the district of Mayurbhanja and constitute twenty-three percent of the total population of that district. Arranged next in order of importance from the point of view of number come the speakers of Kondh, Kui, Saura and Ho.

The Kondhas inhabit mostly the districts of Ganjam, Koraput and Phulbani. A point of linguistic interest may be noted in the gradual dying out of the native language of the Kondhas in Phulbani due to regular intercourse between the Kondhas and the Oriyas. The Kondhas speak a sort of Oriya outside their homes; many families even speak Oriya inside their homes. It is interesting to know that much of the philological study of the Oriya vocabulary demands a knowledge of many of the tribal languages since the latter have greatly influenced the Oriya language. The speakers of Kui are sprinkled over the districts of Sundargarh, Kalahandi, Ganjam and Puri.

The Saoras of Ganjam and Koraput districts are known by various names. In Telugu they are known as Savara and in Oriya by Saura. They

speak a language belonging to the Munda family. Sir George GRIERSON thinks that their language is greatly influenced by Telugu and is closely related to Kharia and Juang. The speakers of Kui are distributed over the districts of Balsore, Mayurbhanja, Sundargarh and Kalahandi.

The Juangs and the Bhuyans inhabit the jungles of Keunjhar and Dhenkanal districts. The Juangs form the most important section of the tribal population of Keunjhar in the central belt of Orissa. They speak a language developed on the same lines as Mundari.

The Kisans of the Sundargarh district are one of the least known tribes of Orissa who live side by side with Orangs and their language shows traces of affinity with that of the Orangs. But much scientific study is necessary before anything can precisely be said about it.

To sum up the story of the tribal languages it may generally be said that though particular district regions are marked out for particular tribal people, there is a sprinkling of all types of tribesmen over the State of Orissa. These days education is being served to the tribal people in the medium of standard Oriya. To the extent it will succeed, Oriya language will be enriched and the tribal languages may ultimately be weakened into extinction, may be though in far distant future.

In the past, Oriya language has been mostly influenced by Sanskrit, Urdu, Arabic, Marathi and English so much so that the common man speaks a language unwittingly making use of a very mixed vocabulary. The future will provide ample interest to the linguists to come, when Hindi becomes the *Lingua Franca* of India and the tribal people are linguistically developed through a medium of standard Oriya.

Now the distribution of languages and dialects in Orissa stands as follows :

The standard Oriya language can be understood all over Orissa among the Oriya people, even in many cases partially understood by the tribal people. Major dialects of Oriya are spoken in Sambalpur in the West; Ganjam and Koraput in the South, Balsore in the North. Various unrecorded tribal languages are distributed all over Orissa particularly in the hills of the Garjats and the Agency areas of the districts.

CONTAMINATION IN PĀLI

By

MADHUSUDHAN MALLIK, *Santiniketan*

An interesting feature in the development of the Pāli language from old Indo-Aryan in the formation of certain words is known as contamination. It is the fusion of two ideas or constructions when they rise up in the mind of the speaker simultaneously or follow so closely that the one gets mixed up with the other.

As an MIA idiom Pāli has followed the usual rules of phonetic changes and has turned and twisted words from OIA as it suited to its genius. In adapting it to its own, it has sometimes taken recourse to two or three sources for a single word and thus enabled us to discover contaminated words.

Contamination has spread in all branches (phonology, morphology and syntax) of the Pāli language. In morphology it is specially prominent. The Aorist, a distinct feature in the Vedas, has particularly provided a good ground for the formation of these sorts of words. Proper names are not immune from the sphere of its influence, cf. Aniruddha which is a contamination with the prefix '-anu'.

Thus *ludda* (*ka*), 'hunter' Mhvs. 28, from *lubdha* (*ka*) is due perhaps to contamination with *ludda*—'cruel, horrible, diabolical' Sn. 247 which is from OIA raudra; *dovacassa*—'unruliness, bad' M.I. 95—is a mixture of Skt. *daurvacasya*—'evil speech' and *daurvratya*—'disobedience', *kaṭasi,* J.I. 146, probably contamination of *kaṭa* + *sīva* (*thikā*), 'charnel-house', cf. *kaṭa* (?)— 'a corpse', cemetry only in phrase *kaṭasin vaḍḍheti; nigaṇtha,* Vin. 1. 233, B. Sk. *nirgrantha* (Divy. 143) 'free from all ties', *nir* + *gaṇṭhi,* Pkt. *niggaṇṭha-* 'a member of the Jaina Order', a form confused between *nir* and *ni; addasā,* Vin. 11. 192, Skt. *adṛkṣat,* the doubling of the dental due to contamination with *addakkhi* (Skt. *adrākṣit*); *upakkiliṭṭha* — 'defiled, soiled, impure', Vism. 13 and *upakkilesa* — 'anything that spoils, impurity, defilement' M. 1. 36, are, as GEIGER says (vide *Pāli Language and Literature* — p. 79), perhaps contamination of *upakkiṭṭha* (*upakliṣṭa*) and *upakkesa* (*upakleśa*) with *upakiliṭṭha* and *upakilesa* (with svarabhakti vowel); *ossajjati* — 'gives up, lets go' Sn. 270, a fusion of two roots √ *sraj* — 'gives up' and √ *sarj* — 'gives away'; *vissajjati*—'gives away' *vi* + *sarj* or *sraj,* the double ss after the analogy of *nissajjati* and *ussajjati,* cf. *ossajjati* for *osajjati,* the present *vissajjati* is not in use, the only forms of the simple verb system are the

following, ger. *vissajja*, usually written *visajja* in meanings 'setting free', grd. *vissajjaniya*, caus. *vissajjeti; avassajati*, J. IV. 425 'to let loose', *ava* + *sṛj*, perhaps *ud* + *sṛj* = Sk. *utsṛjati*, although the usual Vedic form is *avasṛjati*. The form *ossajati* puzzled the Buddhist Sanskrit writers in their Sanskritisation, *apotsṛjati* = *apa-* + *ut* + *sṛj* (Divy. 203); *oggata*, 'gone down, sat', Vin. IV. 55, pp. of *avagacchati*, spelling gg on account of contrast with *uggata*, of *avagamana*, E. Muller (*Pāli Grammar*, p. 43) unwarrantedly puts *oggata* = *apagata; okkasati* — 'takes away' D. 11. 74, confusion of *ut* + √ *karṣ* and *ava* + √ *karṣ; upapajjati* 'to get to, to be reborn into' Sn. 584, may be *upa* + *pad* or a dialectic form of *upajjati* < *ud* — *pad; upahacca* — 'reducing, cutting short' J. V. 267, only in phrase *upaparinibbānāya* — 'coming to extinction after reducing the time of rebirths or after having almost reached the destruction of life', it may have a confusion with *upahacca upajja uppajja* as indicated by B. Sk. *upapadya* — *parinirvāyin; unnaḍa* and *unnaḷa* — 'showing off, insolent', M.I. 32. Buddhaghosa has *ud* + *nala* but it is either a dissimilated form of *ullala* (*n* > *l*) *ud* — *lal* — 'to sport' meaning sporting, wild etc. or still more likely with a dialectal form of *unnata*, Pkt. *uṇṇata*, although the Pāli commentator never thought of that, cf. with this the B.Sk. *unnata* in the same stock phrase *uddhata unnata capala* (M. Vastu 1. 305); *ophuṭa* — 'coveted' (D.I. 246) *ava* + *unta* (Sk. *vṛta vṛ*, opp. *apāvuta* P. *apāruta*) and *ava* + *phuṭa* (*sphuṭa* < *sphuṭ*) always in combination *avuta nivuta ophuṭa; tārayetum*, Sn. 319 is a double construction, a contamination of *tārayitum* and *tāretum*.

THE UNPUBLISHED SONEPUR ORIYA INSCRIPTION OF THE TIME OF KING BHANUDEVA

By

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The early Oriya inscriptions so far published from the western region of Orissa are very few in number. Apart from the Narsinghanath and Harishankar stone inscriptions[1] in Sambalpur and Balangir districts which have been assigned to the 15th century, no early Oriya inscription appears to have been discovered in Western part of Orissa. A medieval Oriya inscription from Sonepur of the time of Vīrakishoredeva has been published in *BORS* 1920 Vol. VI. The history of the development of the Oriya language in this part of Orissa prior to the 15th century remains therefore obscure, as far as epigraphic evidence is concerned. In these circumstances, the discussion and publication of the text of an early Oriya inscription discovered in the town of Sonepur would be useful.

This early Oriya inscription is engraved on the upper part of black chlorite stone slab, the lower part of which is buried in the ground in front of the Khameshwari temple in the town of Sonepur, district—Bolangir, B.C. MAZUMDAR[2] refers to the inscription and quotes a line from it as follows :— ये हरइ ताहार मुण्डरे व्रह्मताल रुद्रताल पडइ. As we shall see MAZUMDAR's reading मुण्डरे (*muṇḍare*) does not occur in the inscription. The word that occurs in its place is कपाले (*kapāle*), and again MAZUMDAR omits several expressions in the sentence as we shall see just now. According to him the inscription belongs to the 12th century but he does not give any reason for his view. Pandit Binayak MISHRA[3] reproduces Mazumdar's reading mentioned above and likewise assigns the record to the 12th Century.

On 17-2-55 (when I and Sri B. PATI, M.A., B.L., B. ED., as members of the Balangir Historical records survey committee visited Sonepur and examined the inscription) it was noticed that the stone slab containing the inscription was partly painted with vermilion. It was reported to us that it was an object of worship of the local people. We were further told by some local people that they had heard from old men that the inscription was discovered from a nearby field and was brought to the front of the

1. See *Indian Historical Quarterly*, 1936 September and Gopabandhu Anniversary Number, Samāj 1954, p. 55.
2. *History of the Bengali language*, Calcutta, 1927, p. 249.
3. *Oḍiyā Bhāṣāra Itihāsa*, Cuttack, 1927.

Khameswari temple. B. C. MAZUMDAR[4] writing about Sonepur refers to one stone inscription of the Saka Year 1253 and he speaks[5] of a slab of stone bearing an inscription as being unearthed from a heap of old ruins.

The stone slab containing the inscription stands about four feet from the ground and is about 2 feet from the ground. Though it stands completely exposed to sun's rays and rains, still it is remarkably well preserved. The inscription consists of 8 lines and the letters are deeply cut and distinct. The record is written in Proto-Oriya (or what BÜHLER calls Proto-Bengali) which is the ancestor of the modern Oriya script. Each letter of the inscription measures 1′ × 4/5′. At the very outset the stone contains two figures which represent the top portion of Siva's trident.

Since the Narsinghnath and the Harisankar stone inscriptions are written in Oriya script (with top curves in place of the horizontal strokes of Proto-Oriya and since the Siddheswar temple Oriya inscription[6] and the Poteswara temple Oriya inscription[7] both written in Oriya script, are dated 1394 A.D. and 1376 A.D. respectively, the Sonepur inscription judging from the point of view of palaeography belongs to about the 13th century if not earlier, i.e. anterior to both of them.

The inscription belonging to the reign of a king called Vira Bhanudeva, registers the gift of several gold coins, [Fanam- Skt. Panam (to a temple)] for longivity of the same king. It is dated in the 16th year of Vira Bhanudeva, the weekday being a Saturday in the solar month Mina the tithi being the 2nd of the Dark fortnight. The details correspond to the 12th March of 1278 A.D. and the inscription belongs to the 16th year of the reign of the Bhanudeva I of the eastern Ganga dynasty. The year of the reigning king is however not absolutely free from doubt.[8]

4. *Sonepur in the Sambalpur tract*, 1911, Calcutta, p. 42.
5. P. 117 ibid, in Appendix II, entitled *'The Stambheswari.*
6. *Epigraphia Indica*, Vol. XXIX No. 13.
7. *JAHRS*, Vol. VI, p. 51.
8. The first three letters of the 2nd line express the year of the king. The significance of the first letter which looks like ଅ is difficult to make out. The 2nd and the 3rd letters I read as '16'. If the 2nd letter would be a punctuation mark then the 3rd letter would read '6'. In this case the date would be March 31st 1268 A.D.

In fact such a letter does not appear to belong to the Proto-Oriya or Nagari alphabet. The letter may stand for a particular numeral. In BÜHLERS' Paleographical plates, Plate or Table No. IX, Column XV contains a symbol resembling the symbol under discussion. But BÜHLERS' symbol stands for the numeral figure 10. However as the symbol under discussion looks like Oriya 'a', I take it as 'a' the first letter of the Oriya alphabet. In the context it may be taken to stand for 'anka' which word sometimes occurs between the word Sambat or Samasta and the numeral indicating the Anka e.g. compare '........... Kapileswara Deva Maharajarikara bijaya rajye samasta 4 Aṅkā Srātei Dhanu Amabai Sauribaze'. In the inscription under discussion the proto-Oriya 'a' also occurs——'a' in line 3.

This inscription closes with two circular marks which stand for the usual danda sign indicating *Virāma*.[9] The word 'ina' occurring in line 5 and 8 is dialectical and means 'here'. The basic term of the expression is 'i' (this) 'na' being the suffix. The word is still used in Balangir district. The word Padisa may be corrupted from Skt. parisad meaning a councillor and is still used as a surname or title in Sambalpur. The word 'Padira' standing for Padirāya appears to be a corruption of the Skt. term 'Pratirāya'. The adjective 'edaviya' qualifying 'Pana'[10] seems to refer to a particular type of 'Pana'.

It may be noted that a number of Ganga fanams were discovered in Sonepur and afterwards brought to the State Museum of Orissa.[11] This is the only inscription of an Imperial Ganga king of Orissa which has appeared in Western Orissa and though it is one of the earliest of Oriya documents discovered so far, the language differs little from modern Oriya apart from the verb 'haraui' where the MIA. (Middle-Indo-Aryan) causative suffix 'apa' > āva is visible in the form of āu.

I am indebted to Sri B. Pati, M.A., B.L., for helping me to read the text on the spot and to Sri J. Mohapatra, the Head Clerk of Rajendra College, Balangir, for preparing the impressions.

Text[1] of
the Sonepur Oriya inscription of the time of king Bhanudeva.

1. Svasti Śrī-Vīra[2]-Bhāṇudevasya pravadhyamāna-vījae-rāje[3] samvata
2. 16 srāhi Mīna-kṛṣṇa 2 Saurivāre[4] Sunapura-kaṭaka-
3. Pachimadesa[5]-Adhīkāri[6] Sāmanta Paḍirāy = Isra-Paḍisaṅkara[7]
4. adhikāre Śrī-Vīrabhāṇudeva-rājāṅkara āi-
5. usva-kāmāthe[8] Śrī-Vaidyanāthadevaṅka ina Eḍavi-
6. ya[9] -paṇamu vāra data 12 ehā je harai harāui
7. tāhāra kapāle Śiva-tāla Brahma-tāla[10] Rudra-tāla ti-
8. ni tāla paḍai tāhāra kapāla ina ho vasa[11] hoi[12]

1. From impressions as well as from reading on the spot at Sonepur on the 17 February, 1955. 2. Text- Vira. 3. For pravarddhamānavijaya-rājye. 4. For Śaurivāre (सौरिवारे) 5. For Paścimadeśa. 6. For Adhikārī. 7. For Pratirāja-Īśvara-Paḍisaṅkara. 8. āyuṣkāmārthe. 9. Reading doubtful. 10. Text—Vrahma-tāla; only the v-symbol is used in Oriya but it stands for the b-sound. 11. Text vasa may stand for vaśa. 12. The inscription closes with two circular signs one above the other indicating 'virāma'.

9. *S.I.I.*, V. No. 1152.
10. See *Hobson Jobson*, p. 265.
11. See under Kalachuri coins from Sonepur by B. B. Nath, *O.H.R.J.*, April 1952, Vol. I, No. 1, pp. 36-40.

Translation

Hail ! On Saturday, the 2nd of the Dark fortnight of the month of Mīna in Samvat year 16? during the prosperous and victorious reign of Śrī Vīra Bhānudeva, during the tenure of office of Īṣvara Paḍisa, the lord and Viceroy ruling in the Western territory with Sonpur as its capital, to Śrī Vaidyanāthadeva has been made here a gift of twelve Eḍaviya Fanams for the sake of the long life of king Vīra Bhānudeva. He who takes these away or causes to take these away, on his forehead fall the three bolts nomely Siva's bolt, Brahma's bolt and Rudra's bolt; his forehead becomes subdued (or ruined).

Vaidyanathadeva of line 5 of the document may be identified with the deity of the same name enshrined on the bank of the river Tel, about 5 miles distant from the town of Sonepur.

AN ETYMOLOGY OF *TOYA*

By

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The Sanskrit word *toya,* meaning 'water' is attested for the first time in the Nighaṇṭu (1.12) where it has been included in the list of *udaka-nāmāni.* It has never been used in the early Vedic literature, and its use is much restricted even in Classical Sanskrit literature. It has no cognate form in other I-E languages, it cannot be derived from any Indo-Aryan root and so in all probability it seems to be a loan-word in Sanskrit.

Now, we find that the word for 'water' in modern Boḍo language is *dai* and in the Tiprā language (a sister language of Boḍo) it is *tai* or *tui.* These modern words are to be derived from a common proto-Boḍo word like **tay* or **tuy* which might have been borrowed into Sanskrit as *toya.* The words for 'river' in the Boḍo and Tiprā languages are *dai-mā* and *Tai-mā* respectively, and it is significant that in the Viṣṇu-purāṇa (ii,4,28) Toyā is the name of a river in Śālmala-dvīpa. This also corroborates our contention that *toya* is a loan-word in Sanskrit from the Boḍo-Tiprā branch of the Tibeto-Burman family of languages.

TAMIL LETTERS AND SOUNDS OF THE SEVENTEENTH CENTURY

By

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In tracing the history of Tamil, the studies of the foreigners of this language form an important source. For one thing, the pronunciation of Tamil words as heard by them, naturally according to the phonemic peculiarities of their respective languages, is an important piece of information from which one can arrive at the phonetic value of the Tamil letters in their course of History. For another, the foreigners were familiar more with the colloquial language, for a study of which we have not many other sources of knowledge.

The Westerners brought with them the printing press to India and the first Tamil types were produced by Joanes GONSALVES in 1577. The first grammar of Tamil language by a foreigner, now available is that of BALDE, a Dutch Missionary; but, he himself refers to previous studies on the subject, especially that of the Jesuit Father CASPARD'AQUILAR, which unfortunately are all lost to us. A translation of this seventeenth Century Dutch Grammar was given in the *Bulletin of the Deccan College* by Mr. J. A. B. Van BUITENEN with a note on the phonetic and other peculiarities by Mr. P. C. GANESHSUNDARAM.

During my stay at Poona in connection with the Summer School of Linguistics, thanks to Mr. GANESHSUNDARAM and Mr. C. R. SANKARAN, I had occasion to look at the original and get a photographic copy of this part of the bigger work by BALDE through the courtesy of the Deccan College Historical Museum. Important as the above mentioned paper is, a more detailed study of this grammar is necessary for arriving at reasonable conclusions on the state of the Tamil language in the 17th century. Unfortunately, in the *Bulletin*, the original is not given, especially those portions where we have the Tamil transcriptions. These transcriptions are important from two points of view—first, from the point of view of Paleography and second, from the point of view of finding out the sound values of the Tamil letters as given by BALDE. This will lead one to the study of grammar from the paleographic point of view, from the phonetic point of view and from the morphological point of view. In this essay the paleographic or orthographic point of view can only be studied with a necessary note on the sound value of the letters, reserving for a future occasion the other two studies.

The Tamil letter representing the sound, the short 'a', is not in BALDE's times, having as in modern writing an elongated loop under, and in continuation of, the curve at the top; the modern loop is represented there only as a horizontal line. 'i' is represented like the English 3 with the lowest curve rising up to the left and to the top. In the long 'u' the mark which differentiates it from the short 'u' starts at the right hand end of the horizontal line and is written as though by the side of the short 'u', whereas in modern writing it is placed above and within the limits of the horizontal line. The short 'e' and the long 'e': and similarly the long and the short 'o's are not differentiated as in modern times or as in older times when a dot was to be placed on the top of the shorter letter. Nor are there any dots on the pure consonants to differentiate them from Syllabic consonants those occurring as a syllable in combination with a following vowel. These dots seem to have disappeared from the writing system soon after the 10th century A.D., to come back slowly in the 19th century. The 'āytham' represented now by three dots arranged as it were in a triangle is found written in the 17th century just like the longer Tamil syllabic letter 'ku'.

Coming to the consonants, in 'k' the loop on the lower right hand side is not found to join, as in modern writing, the vertical line coming from the top from the middle of the horizontal line. The lower line in 'n' is not as in modern writing produced straight to the left even beyond the vertical line; it stops as a curve or as a semi circle, the bottom part of this curve going no further to the left than the top part. In 'r' there is no line starting from the right vertical line and going to the left making an obtuse angle, as in modern print. In 'l' the starting loop of the left, seems to be, a little lower from the other portions of the letter. 'v' is like the modern letter but the horizontal line is produced to the left almost as in 'a', the only difference being the vertical line here is not produced downwards as in 'a'. It is difficult to distinguish the short 'a' and 'vu', the long 'a': and the long 'vu'. In z (as in azure or 'r' in farm) the lowest portion which is in the form of a horizontal line is very much shorter than what it is today. The lowest portion seems to be more like the lower line of Tamil dental 't'. The hard trilled letter 'r' is written like the English 9 or inverted 6.

Coming to the syllabic letters, the marks of the short 'i' and long 'i' begin not from the right hand end of the topmost vertical line but from the middle of it. The sign of the shorter 'i' goes up a little, then makes a little curve, only to flatten up into a straight line to be parallel with the vertical line but never going beyond the limits of the lower vertical line. The mark of the longer 'i' is differentiated from this by its ending in a small loop at its right, almost touching the vertical line. Here also the marks denoting the short 'e' and the long 'e:' are not differentiated; nor are the marks for the

KORTE MALABAARSCHE LETTER-KONST.

De Malabaren sijn gewoon op bladeren van wilde palmeer of jagerboomen [te] schrijven met ysere pennen, sy hebben hare letteren van ouden tyden af gehad. Hare letteren sijn aldus onderscheyden. 1. sommige korte genaemt of loopende, [2.] andere lange. 3. sommige klinckers of vocalen, die by haer letteren van leven genaemt werden, om dat zy de ziele en't leven aen de medeklinckers geven. [4.] sommige medeklinckers of lichaem letters, waer van de klinkers het leven [z]ijn. 5. sommige heeten sy gemengde letters, die wy diphtongen noemen, [uyt] [t]wee klinckers gesproten. 6. sommige werden genaemt letteren, die men alleen in't begin van een woort gebruyckt. [7.] sommige in't midde. 8. sommige in't eynde.

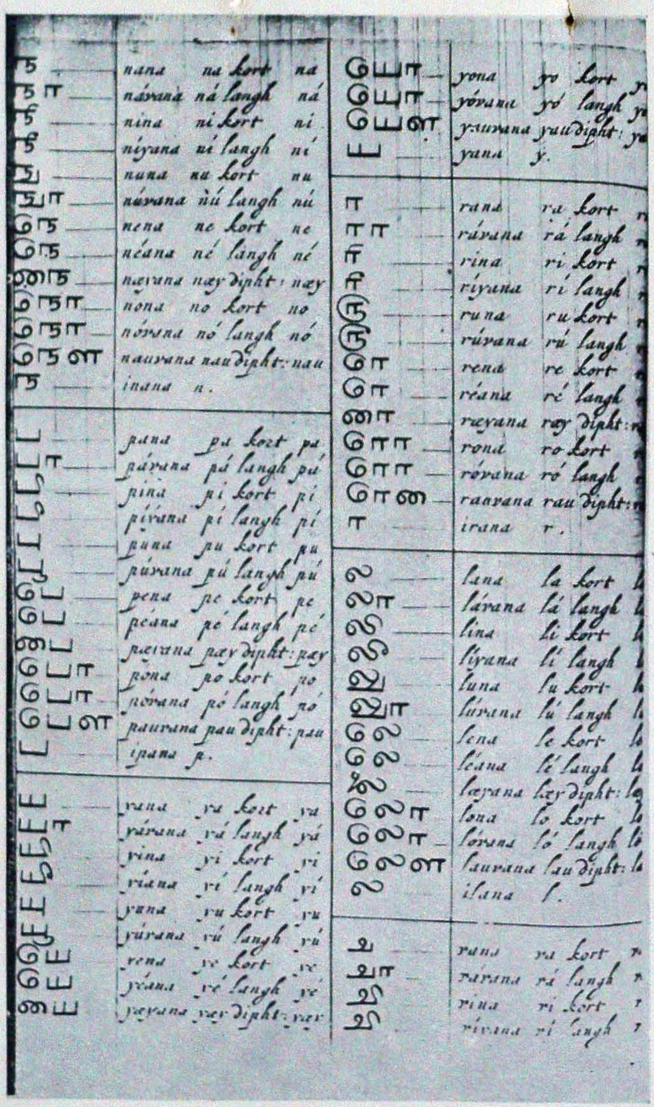
[D]ese verthoonen de Vocalen ofte klinckers

De medeklinckers vereenicht met [de] klinckers maken een syllabe.

Dese worden in't beginsel van een woort gebruyckt, by haer Taleyelutu genaemt.

Dit sijn Consonanten ofte medeklinckers

—By courtesy of the Historical Museum of the Deccan College.



nana na kort na
nárana ná langh ná
nina ni kort ni
niyana ní langh ní
nuna nu kort nu
núrana nú langh nú
nena ne kort ne
néana né langh né
næyana næy dipht: næy
nona no kort no
nórana nó langh nó
naurana nau dipht: nau
inana n.

pana pa kort pa
párana pá langh pá
pina pi kort pi
píyana pí langh pí
puna pu kort pu
púrana pú langh pú
pena pe kort pe
péana pé langh pé
pæyana pæy dipht: pæy
pona po kort po
pórana pó langh pó
paurana pau dipht: pau
ipana p.

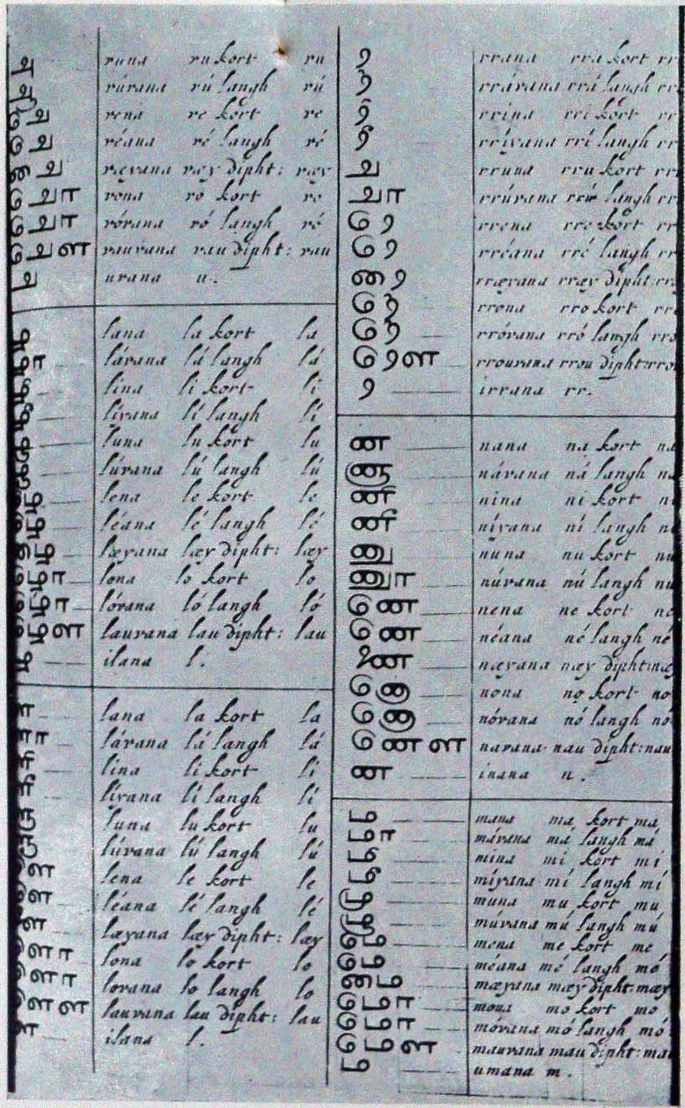
vana va kort va
várana vá langh vá
vina vi kort vi
víana ví langh ví
vuna vu kort vu
vúrana vú langh vú
vena ve kort ve
véana vé langh vé
væyana væy dipht: væy

yona yo kort y
yórana yó langh y
yaurana yau dipht: y
yana y.

rana ra kort
rárana rá langh
rina ri kort
riyana rí langh
runa ru kort
rúrana rú langh
rena re kort
réana ré langh
ræyana ræy dipht:
rona ro kort
rórana ró langh
raurana rau dipht:
irana r.

lana la kort l
lárana lá langh l
lina li kort l
líyana lí langh l
luna lu kort l
lúrana lú langh l
lena le kort l
léana lé langh l
læyana læy dipht: l
lona lo kort l
lórana ló langh l
laurana lau dipht: l
ilana l.

rana ra kort
rárana rá langh
rina ri kort
rírana rí langh



runa ru kort ru
rúrana rú langh rú
rena re kort re
réana ré langh ré
ræyana ræy dipht: ræy
rona ro kort ro
rórana ró langh ró
raurana rau dipht: rau
urana u.

lana la kort la
lárana lá langh lá
lina li kort li
líyana lí langh lí
luna lu kort lu
lúrana lú langh lú
lena le kort le
léana lé langh lé
læyana læy dipht: læy
lona lo kort lo
lórana ló langh ló
laurana lau dipht: lau
ilana l.

lana la kort la
lárana lá langh lá
lina li kort li
líyana lí langh lí
luna lu kort lu
lúrana lú langh lú
lena le kort le
léana lé langh lé
læyana læy dipht: læy
lona lo kort lo
lórana lo langh lo
laurana lau dipht: lau
ilana l.

rrana rra kort rr
rrárana rrá langh rr
rrina rri kort rr
rríyana rrí langh rr
rruna rru kort rr
rrúrana rrú langh rr
rrena rre kort rr
rréana rré langh rr
rræyana rræy dipht: rr
rrona rro kort rr
rrórana rró langh rr
rrourana rrou dipht: rr
irrana rr.

nana na kort n
nárana ná langh n
nina ni kort n
níyana ní langh n
nuna nu kort n
núrana nú langh n
nena ne kort n
néana né langh n
næyana næy dipht: n
nona no kort no
nórana nó langh nó
naurana nau dipht: nau
inana n.

mana ma kort ma
márana má langh má
mina mi kort mi
míyana mí langh mí
muna mu kort mu
múrana mú langh mú
mena me kort me
méana mé langh mé
mæyana mæy dipht: mæy
mona mo kort mo
mórana mó langh mó
maurana mau dipht: ma
umana m.

—By courtesy of the Historical Museum of the Deccan College.

short 'o' and the long 'o:'. The marks of short 'u' and the long 'u:' coming with the palatal nasal 'n', cerebral nasal 'n', dental plosive 't', dental nasal 'n', lateral 'l', alveolar nasal 'n' and trilled 'r' do not form an elongated loop, below the consonants as they do in modern writing. This seems to be on a part with the absence of the loop in 'a'. In all these cases, the mark for the longer sound is written separately on the right—a mark which is almost identical with the ordinary Tamil 'r'. This sign occurs also in the syllabic letters of consonants occurring with the longer 'e' and 'o'. The sign for the longer 'a' is also the same. In the trilled 'r' the sign of the longer 'a' is a kind of a comma, placed on the left hand top. If the sign for 'i' turns to the right, this turns to the left. This sign occurs in the trilled 'r' when also in combination with 'o'. In those letters whose right side ends in a vertical line going up, as in 'p', 'y', 'v' the curved sign representing the added 'i' starts straight from the top of the vertical line, but the vertical line ceases to be straight and is found slightly to be slanting to the left; the loop in the longer 'i:' comes very much near the middle of this slanting line. The sign for the longer 'u:' added to 'm' is very much like that which is added to 'z' (as in azure). The short 'u' and the long 'u:' added to 'z' is differentiated from this, by the curve underneath never reaching beyond the lower horizontal line and never going up to reach almost the top of the left vertical line. The short 'u' added on to 'z' has no loop at the end of its curve, whereas the longer 'u' has it. The same remarks may be made about the longer and shorter 'u' added to the cerebral 'l'. When long 'a:' is added to the cerebral 'n' we usually write 't' today with a curve beginning at the end of the vertical line and turning to the left, instead of placing a mark like the ordinary 'r' on the right. The same thing occurs in the syllabic letter when this consonant makes a combination with 'o' following it. Today the longer 'a:' added on to the cerebral 'n', the alveolar 'n', and the trilled 'r', are all written this way. In the Tamil alphabet given by Balde the 'o' added on to the cerebral 'n' alone is not written this way but is followed by a sign like the ordinary 'r' as in the case of other letters. This may be a mistake: or it may be that both kinds of writing were in vogue in his time. It will be seen from the description given above that it is very difficult to distinguish velar nasal 'nu' 'vu' and trilled 'ru'. The 'rau' is also found wrongly written and is evidently a mistake.

On four pages as given in the photographic copies herewith attached, the vowels, the consonants and syllabic letters, (that is, consonants with vowels following them) are transcribed and described with their Dutch values. Mr. Buitenen calls this "a remarkable piece of calligraphy". This survey of the Tamil alphabet begins with this short note which runs in Mr. Buitenen's translation thus:—"The Malabars are accustomed to write on the leaves of the old palmyra with iron styles. They have had their charac-

ers from of old. Their letters are distinguished: 1. Some are called short or running (Loopende); 2. Others long; 3. Some vowels which they call letters of life because they give soul and life to the consonants; 4. Some consonants or letters of body, of which the vowels are the life; 5. Some they call mixed letters, which we call diphthongs, composed of two vowels; 6. Some are called letters used only at the beginning of a word; 7. Some in the middle; 8. Some at the end." The quantity is explained by BALDE with the words short and long, and is also differentiated by the accent placed on the signs of long sounds. The short sound is known as 'Kuril' in Tamil, the long sound is 'neṭil'. The vowels are called 'Uyir'—life or soul. The consonants are called 'Mey'—body. "Tamil grammarians designate vowels by a beautiful metaphor, as 'Uyir' or the life of a word; consonants as mey, or the body; and the junction of a vowel and consonant as 'uyir mey', or an animated body" (CALDWELL, p. 132). The diphthongs are "Santhiakkaram', the Tamilised form of Sanskrit term 'Sandhyakshara'. The reference to letters occurring only at the beginning or at the middle or at the end of words describe as it were, the Tamil phonetic system.

Here we also get a clear idea about the method, these letters were pronounced, by the students of these days whilst naming the individual letters of the Tamil alphabet. The short vowels get 'na' added after their sounds; (i.e.) 'ana' in 'a', etc., long vowels and diphthongs get 'ana' coming after their sound for the purpose of enabling the students to recite (Ex. avana) these sounds in a sing song tone. In between the vowel sound and this enunciative increment, 'v' comes in to prevent hiatus after 'a:' 'u:' 'o' and 'au'. It is curious that the long 'i:' is represented by 'y' with a long accent on 'y'. Probably the 'i' had been omitted by mistake and the accent transferred to 'y'. It may also be that the long 'i' was pronounced more like 'y' as is even now done in some cases in the colloquial speech. The true explanation may be that the Dutch 'y' approximates to this 'i' sound in Tamil.

In reciting or naming the consonants an 'i' is added as a prothetic vowel, except in the case of 'v' and 'm' where we find them written as 'uvana', and 'umana'—that is with a prothetic labial vowel 'u', probably because the consonants which they precede are bi-labial and labio-dental. When the consonants are followed by vowels, no such prothetic vowel is added; but the syllable is followed by the usual enunciative increment added as a rule to the respective vowels.

This gives us a picture of the way the young children were taught the alphabet in that age. Till very late in our Twentieth century, this method was continued in the old Pial Schools of Tamil land, till they are replaced by modern Elemenatry schools. On page 193 of BALDE's book there is a

picture of the children writing on the sand. We also see scrolls of palmyra leaves or Ōlai on which the letters were to be written as we now do on paper. 'a', 'i', 'u', 'e', 'o' are the vowels; each has two forms one short and the other long which are all clearly marked and distinguished. Every long vowel immediately follows its shorter counter-part. In between 'e' and 'o' occurs the diphthong 'ai' which is given the value 'ay' with an accent on the first sound. After 'o:' occurs the diphthong 'au'. The 'ai' when following the consonant is represented by 'oi' but its pronunciation is given as 'oei". 'ei' is the pronunciation as given by Dr. CALDWELL, who, however, does not mention the other pronunciation while BALDE mentions both. Thus we get the Twelve Vowel sounds of Tamil.

The thirteenth letter in the Tamil alphabet goes by the name of 'aytam' whose pronunciation has been changing from time to time. The value is given by as 'aq' by BALDE and in the alphabet it is named or recited separately as 'aquana'. This will be seen later on, to suggest a palatalised velar fricative sound.

The consonant 'k' is represented by a 'c'. When 'k', is followed by 'i' it is represented as 'qui'; when it is followed by 'e' it is represented as 'que'. 'q' thus represents the palatalisation of this consonant 'k'. When the consonant 'k' is named as 'iquana' we also find this palatalisation being due to the influence of prothetic vowel.

The palatal consonant like the one which occurs in 'church' is represented as 'ch'. The dental plosive is represented by 't', and the bi-labial plosive by 'p'. The cerebral plosive is represented with an 'r' with two dots on the top. This cerebral 't' is a letter which causes confusion to the students of Latin as pointed out by Beschi, since there is only a dental 't' in their language and since they do not have the alveolar 't' as found in English. Probably they heard this sound as a flap coming very much near the 'r'. It is this which is responsible for an 'r' coming in the place of cerebral 't' in the westernised names like Tuticurin and Tranquebar. The other plosive was originally an alveolar in Tamil. This has come to be pronounced as a trilled 'r' which can be represented by two 'r's; BALDE gives its value exactly like this as 'rr'.

Coming to the nasals, the dental nasal is represented as 'n', the labial nasal as 'm'. Difficulty arises with reference to the velar, palatal, cerebral and alveolar nasals. The alveolar nasal is not differentiated from the dental; probably they were not then differentiated from each other even as they are not, in modern pronunciation. Both are now pronounced as alveolars except when the dental nasal is followed by the dental plosive, in which case it is pronounced as a dental. The velar nasal is given the value 'ngn'.

The final 'n' here is curious but probably is an attempt at representing unconscious nasalisation of the vowel following this velar nasal. The palatal nasal and the cerebral nasal are given the values respectively 'nh' and 'hn'; that is, the palatal, is represented by 'n' followed by an 'h' and the cerebral is represented by an 'n' preceded by an 'h'. If 'c' in BALDE's system represents 'k' the palatal plosive represented as 'ch' is then the velar as followed by an 'h'. The 'h' is probably the writers' method of representing the palatal sound found in 'ach'. It is curious to learn that the Tamilians of the age of Nannūl pronounced their 'aytams' as a kind of an 'h' or breath or fricative in the cerebral region or more correctly in the palato-alveolar region. When the palatal nasal is represented as 'nh' it probably means that a nasal sound has to be produced in the palatal region. The cerebral nasal represented as 'hn' probably points out that the tongue was placed in the palatal alveolar region (which is near the cerebral region) and a nasal pronounced from the place.

Coming to the semi-vowels 'y' represents 'y', 'r' represents 'r', 'l' represents lateral dental 'l', 'v' represents 'v'. The cerebral 'l' is not differentiated from the dental 'l'. Nor is the 'z' (azure) differentiated from both. This letter is often confused with the cerebral 'l' in the South districts, a confusion which is found in BALDE'S transcription as well. The order of the consonants in Tamil alphabet is as in the transcription by BALDE 'c', 'ngn', 'ch', 'nh', 'ř', 'hn', 't', 'n', 'p', 'y', 'r', 'l', (dental) 'v' (cerebral), (z) as in (azure or like 'r' in farm); 'l' (cerebral), 'rr' (alveolar), 'n'.

When BALDE gives the pure consonants, he gives the trilled 'r' which he represents by 'rr' after 'y' instead of the ordinary 'r'. This mistake makes him mention the ordinary 'r' just before the final alveolar 'n' instead of the 'rr'. This is due to the confusion in the pronunciation of these two sounds which were not probably very much distinguished in hurried pronunciation. Here BALDE seems to distinguish the cerebral 'l' from the dental 'l' by placing a horizontal line across the 'l' in its middle portion. The Z which also he represents by 'l' is differentiated from his other 'l's by three dots placed parallel on the top of the slanting line. When he gives the syllabic letters (i.e.) each of the consonants occurring with the twelve vowels, he gives the order as found in Tamil alphabet without committing those mistakes which we find in his enumeration of the pure consonants. But here also there is one mistake that is the 'm' series instead of being given immediately after the 'p' series is given at the very end that is after the alveolar 'n' series.

In Modern Tamil Infant Readers, certain Sanskrit sounds are found represented by Grantha characters, and these are learnt by the children. These are absent in BALDE's book though in the transcription of Tamil passages there is room for suspecting the use of 'sh' and 'ksh' probably in the

words 'tosham' and 'moksham'. In any case this absence is significant as showing the rarity of these Sanskrit sounds occurring in the colloquial Tamil language of the Seventeenth Century.

These letters are the phonemes of the Tamil language and some of them change their phonetic value when coming in the middle of a word. Again some of these phonemes had probably a tendency to fall together. There are evidences in the transcription given by BALDE and they have to be reserved for a more detailed study.

BALDE's book was printed in 1672. He refers to one Francois whose mother tongue was Malabar and who was his interpreter. BALDE arrived in India in 1654 and stayed till 1664. The transcribed passages seem to follow the literary usage. Therefore, they may be taken to represent an earlier language. The transcriptions also show the influence of the Roman Catholic Portuguese whom BALDE did not want to offend. If so, these passages may be traced to a Tamil version used by the Portuguese long before BALDE. These considerations will induce one to conclude that the language we study in BALDE's writing is that of the closing years of 16th century.

The Malabaric is the general name of the Tamil language in the writings of the Portuguese and the Dutch of the 16th and 17 centuries. "In the first book ever printed in Tamil characters at Ambalakkadu on the Malabar Coast in 1577 or 1579, the language of the book is styled Malavar or Tamil" —(Dr. CALDWELL). This explains the use of the name Malabaric for the Tamil in BALDE.

The Tamil paleography has been studied only with the help of the inscriptions and copper plates. The cursory writing found in manuscripts will naturally differ from these; yet those have not been studied till now. No manuscript as old as that of BALDE's book has been known, though it is suspected that there are manuscripts of an earlier age in Tibet. In this study, therefore, BALDE's book which gives a manuscript transcription, is important.

The Tamil letters as found in the inscriptions of the 16th century are found listed on pages 56 and 57 in a book called Pandai-t-Tamil Ezuttukkal by my friend T. N. SUBRAMANIYAM in the row No. XVI (Based on 260 of 1930 Madras Epigraphic Report,. The Srirangam Inscriptions of Acyutadevraya of the 1534 A.D. In this article the modern forms of Tamil letters have been often referred to. Any modern Tamil infant reader will give this information for comparison. This book also gives the forms on pages 54 and 55). The letters found there are very much similar to those given by BALDE. In 'i' the curve which goes to the left and to the top is found in the inscription to curve thereafter from the top to the right and then to turn downwards so as

to be parallel to the top portion of that letter. In the 3-like formation here in the centre on the right a kind of angle or dent is formed. In 'nh', the vertical line on the right, ends in a loop before curling up to the right a little and turning down to curl up to the left. In the dental 'n', the lower horizontal line goes beyond the centre, towards the left very much like the lower horizontal line as found in BALDE's dental 't'. BALDE's dental 'n' seems to be more like the 14th century letter. In 'v' the horizontal line starts like a curve from left to right. In 'Z' the lower horizontal line is not horizontal. It starts just at the centre of the upper horizontal line in continuation of the upper curve; it goes a little to the right and then turns making an angle, to the left. The trilled 'r' is more like a blurred modern letter for that sound rather than the inverted 6 form as found in BALDE. In the syllabic letter 'ku' the sign for 'u' starts at the right hand end of the letter 'k' as a curve going straight to the right a little and then curving down to the left, whereas in BALDE the end of the letter 'k' itself makes a continuous curve without first going to the right a little. The other letters are as found in BALDE.

PHYSICAL ANALOGIES OF LINGUISTIC STRUCTURE *

By

W. MEYER-EPPLER **, *Bonn*

[*Translator's note*: This paper is published here, firstly, to introduce Indian scholars to the recent mathematical trends in Linguistics; secondly, to introduce them to the fundamental idea that a large part of our knowledge, put in a mathematical form, is essentially similar in structure in the different fields of intellectual enquiry (physics and other natural sciences as well as linguistics); lastly, for the reason that, although several scientific papers on particular problems in linguistics using the methods of statistics and probability theory have appeared in English (many of which are cited in this article itself), the present author alone describes in a condensed and clear manner the different types of problems in linguistics for which mathematical techniques have been and can be applied; he points out the tool-value and limitations of these techniques and brings into relief the structural similarity of a large part of our knowledge, when put in a mathematical form——*Tr.****]

Structural Linguistics is making use, in increasing proportions, of mathematical ("distributional") ways of description. That it shows the tendency of becoming a mathematical science,[1] does not appear to be surprising, when the inner ordering of all linguistic phenomena is taken into

[* This paper is an English translation (by P. C. GANESHSUNDARAM) of an article in German entitled "Physikalische Analogien Linguistischer Strukturen" which appeared in the *Physikalische Blätter,* 11 (1955), Heft 10, pp. 445-452, and is published here with the kind permission of the author and the publishers of the original German article.—*Tr.*]

[** Director of the Institut für Phonetik und Kommunikationsforschung der Universität Bonn and Co-Editor of the *Nachrichtentechnische Zeitschrift.*—Tr.]

[*** In a letter to the present translator the author of this article says, "Selbstverständlich bin ich gerne damit einverstanden, dass Sie die englische Version meines Aufsatzes über 'Physikalische Analogien linguistischer Strukturen' im Dr. Taraporewalla Memorial Volume von Indian Linguistics veröffentlichen." ("Of course, I am quite in agreement that the English version of my article on 'Physikalische Analogien linguistischer Strukturen' be published in Dr. Taraporewalla Memorial Volume of Indian Linguistics").

As a humble homage to the memory of the late Dr. I. J. S. TARAPOREWALLA, one of the great pioneers in the field of Comparative philology of an early generation, this English translation of Dr. MEYER-EPPLER's article in German is offered now, being representative of an interesting development in what may be called modern mathematical linguistics. It may be remembered that the paper points, through mathematical thinking, towards the unification of different levels of experience (vide Translator's note)—C. R. SANKARAN.].

1. M. JOOS, *J. Acoust. Soc. Amer.,* 22 (1950) 701. Z. S. HARRIS, *Distributional Structure in Linguistics Today,* New York, 1954.

account. Since the methods taken, by preference, from statistics and probability theory for the discovery of these relationships[2] of order, in the case of almost all linguistic phenomena so far investigated, find a related mathematical formalism in the field of theoretical physics, it was natural to take over physical nomenclature to the characteristics of linguistic structure, without aiming at more than a purely heuristic analogy consideration. For the physicist it may not be without attraction to become acquainted with the taking over of concepts familiar to him to a field outside that of the natural sciences.[3]

The knowledge that speech-phenomena allow themselves to be developed as a *stochastic* process, as a discontinuous manifold of sign-carrying elements ("constituents"), which can be isolated by linguistic analysis,[4] forms the starting point of every mathematical-linguistic investigation. All *continuous* phenomena are left over to extra-linguistic disciplines.

Linguistic analysis utilizes a series of concepts belonging to the natural sciences. For example, in the IC-analysis ("Immediate Constituent Analysis") of R. S. Wells[5] a given *text*, through "focal" dichotomy, is composed of dispensable and indispensable elements; the dispensable elements are called "satellites" and the indispensable elements "nuclei". In the choice of these concepts, the idea that there exists[6] "a kind of gravitational pull" among the constituents of a text played its rôle throughout. One finds preferential "affinities", which determine for every element a concomitant partner.

The constituents functioning as nuclei or satellites can belong to several orders within the linguistic-semiotic hierarchy. J. Lotz distinguishes among the following stages:[7] *minimal sign, morpheme, word, phrase, clause* and *sentence*. It is to be noted that neither the *sound* nor the *syllable* appears in this statement. Both of these are not linguistic elements in the real sense, although they can be profitably used in individual cases. Thus, for example, there is no great difficulty in giving the number of syllables

2. P. Guiraud, *Bibliographie Critique de la Statistique Linguistique*, Utrecht/Anvers, 1954.

3. L. Bloomfield, the inaugurator of a mechanistic 'anti-mentalistic' linguistics even asserted that every truly scientific development must make use of physical terminology (*Language*, 12 (1936) 92).

4. B. Bloch *and* G. L. Trager, *Outline of Linguistic Analysis*, Baltimore, 1942. L. Hjelmslev, *Omkring sprogteoriens grundlaeggelse*, Copenhagen, 1943 (English version: *Prolegomena to a Theory of Language*, Baltimore, 1953); also *Stud. Linguist.*, 1 (1948) 69. Z. S. Harris, *Methods in Structural Linguistics*, Chicago, 1951.

5. R. S. Wells, *Language*, 23 (1947) 81; cf. also E. Haugen, *Language*, 27 (1951) 211.

6. R. S. Pittman, *Language*, 24 (1948) 287.

7. J. Lotz, *J. Acoust. Soc. Amer.*, 22 (1950) 712.

corresponding to a morpheme or a word, while a mutual *demarcation* of syllables, devoid of arbitrariness, can be impossible. Similar difficulties are found in the case of sounds. In their place appears, as the smallest demarcable and distinctive unit, the *phoneme* and the smallest meaningful unit consisting of phonemes is precisely the *morpheme* (e.g., the word-stem, a prefix or a suffix, etc.). M. Joos characterises the morpheme as "meaningful molecules" which are built out of "invariant atoms".[8]

Counting out letters and groups of letters (digrams, trigrams, etc.) in a text, is not, in general, the appropriate means towards the description of linguistic phenomena. On the other hand, such a numerical estimation of letters renders good service in the case of cryptographic problems (that is, in the case of encoding and decoding of messages).

There are, however, a few cases, where the orthography of a language comes so near a phonemic transcription that the counting of letters can be of linguistic value; such languages are, for example, the Finnish, Czech and Turkish, but not, however, German, English, French or modern Greek.

The molecular conception of Joos can be further refined by comparing[9] the text-elements with gas, liquid or crystal molecules. In so doing one can obtain a more fitting analogy with one of these aggregate conditions than with another of them, in accordance with the properties in which one is interested. For the description of a set of signs, interpreted in this way, the methods of *statistical thermo-dynamics* can be adopted.

The Entropy of Information

Let the text consist of not too small a complexity of linguistic signs which are taken from a finite set of elements (e.g., the phoneme inventory of a national language). Let the number of distinct elements in this set be K, and the probability of their occurrence in the text $p_1, p_2, \ldots\ldots p_K$ An important structural characteristic is arrived at, when the deviation of the law of distribution of p_i from the statistical normal distribution is determined, by calculating the quantity

$$H_1 = -\sum_{i=1}^{K} p_i \operatorname{ld} p_i.\ ^{10} \qquad (1)$$

8. See footnote 1.
9. W. Fucks, *Stud. Gen.*, 6 (1953) 506.
10. "ld" stands for "logarithm to the base 2".

H_1 is called the "first order entropy of information". Its fraction,

$$h_1 = \frac{-\sum_{i=1}^{K} p_i \operatorname{ld} p_i}{\operatorname{ld} K} \tag{2}$$

the "relative entropy of information", obtained on dividing it by the highest value of ld K, which appears in the statistical normal distribution, gives an indication as to how uniformly the set of signs is employed.

By means of equations (1) and (2) can be described not only texts by individual authors but even entire linguistic communities. An entropy of information, however, cannot be defined in simple terms either for a given text or for an idiolect[11] or a language. One has to ascertain first of all what types of signs (within the semiotic hierarchy) and what characteristics the investigation is to include.

Historical Observations

The idea of studying the higher states of linguistic organisation by means of statistical methods has its origin in the beginning of this century, particularly among the psychologists.[12]

Although these earlier investigations employed only modest mathematical techniques (essentially the calculation of the arithmetical mean and the deviations of the individual sign distributions, which were counted out, was employed), they were already showing quite interesting results,[13] which, however, in the following years had almost gone into oblivion. Only about

11. An idiolect according to B. Bloch (*Language*, 24 (1948) 7) is the "totality of the possible utterances of one speaker at one time in using a language to interact with one other speaker."

12. K. Marbe, *Über den Rhythmus der Prosa*, Giessen, 1904. H. Unser, *Über den Rhythmus der deutschen Prosa*, Diss. Freiburg, 1906. A. Lipsky, *Arch. Psychol.*, 4 (1907). P. Kullmann, *Z. Psychol.*, 54 (1954) 290.

G. Herdan, *Naturwiss.*, 41 (1954) 293, further refers to a "Statistischen Versuch über die Formen des lateinischen Hexameters" by W. M. Drobisch, *Ber. Verh. Kgl. Sachs. Ges. Wiss.*, Leipzig, Phil.-Hist. Kl., 18 (1866) 75.

13. For example, in the works of Goethe and Schiller the mean number of syllables per word lies between 1.5 and 1.6 in the colloquial language (prose-dramas and letters) as against its value between 1.8 and 1.9 in the case of the literary language (letters of good style, narratives and scientific treatises). The reason for this is to be sought in the fact that in the colloquial language the monosyllables (that is, the monosyllabic words) are strongly favoured.

30 years later the study of linguistic-statistical questions was again begun afresh, now from the more competent statistical quarters.[14]

These investigations, however interesting they were individually, nevertheless remained very scanty from the linguistic point of view. In a moment, as it were, the situation changed when C. E. SHANNON put forward his *mathematical theory of communication.*[15] Later he himself studied[16] the problems relating to the information entropy of printed English texts, and information theory analysis was at once shown to be a workable tool for linguistic investigations.[17]

Also, the properties connected with the entropy of the letters of the alphabet and of groups of letters, which are so important in communications engineering and cryptanalysis, have been worked out and published in part.[18]

The earlier statistical investigations of G. K. ZIPF,[19] carried out from very general view-points, could now be evaluated and brought in line with the higher mathematical stand-points.[20]

The Temperature of Information

B. MANDELBROT starts with the entropy of information. He considers it as a measure of value which he places higher, the greater the 'diversity' of the text. Thus, for example, a text consisting of 1009 elements (say, words), of which 9 occur with a relative probability of 0.1 and the remaining 1000 with a probability of 0.0001, is of less value than a text in which all the units are equally probable. If the elements of a text are ordered in accordance with the probability of their occurrence, that is, in accordance with their statistical *rank*, then, between the rank r and the corresponding

14. G. U. YULE, *Biometrika*, 30 (1939) 363; *The Statistical Study of Literary Vocabulary*, London, 1944. W. C. WAKE, *Hibbert J.*, 47 (1948) 50. A. S. C. ROSS, *J. Roy. Statist. Soc.*, B 12 (1950) 19.

15. C. E. SHANNON, *Bell Syst. Tech. J.*, 27 (1948) 379, 623; also (with W. WEAVER) *The Mathematical Theory of Communication*, Urbana, I., 1949.

16. C. E. SHANNON, *Bell. Syst. Tech. J.*, 30 (1951) 50.

17. G. A. MILLER, *Language and Communication*, New York—Toronto—London, 1951. E. C. CHERRY, M. HALLE, R. JAKOBSON, *Language*, 29 (1953) 34. See also the review of the book of SHANNON and WEAVER by C. F. HOCKETT, *Language*, 29 (1953) 69.

18. As for instance, for German by K. KUPFMULLER, *Fernmeldetechn. Z.*, 7 (1954) 265, and for English by D. A. BELL in *Communication Theory* (publ. by W. JACKSON), London (1953), p. 383.

19. G. K. ZIPF, *The Psycho-Biology of Language*, Boston, 1953.

20. B. MANDELBROT, *Communication Theory*, London (1953), p. 486; *Word*, 10 (1954) 1.

relative elemental probability p_r, a strikingly regular relationship is found, expressed in the form

$$p_r = P(r + \varrho)^{-B} \tag{3}$$

where P, ϱ and B are constants of the text. MANDELBROT denotes as "text parameters" the quantities B and ϱ and the total number R of the text-building elements. Equation (3) can be theoretically derived; it is called the "canonical law of the probability of rank" and is the consequence of a

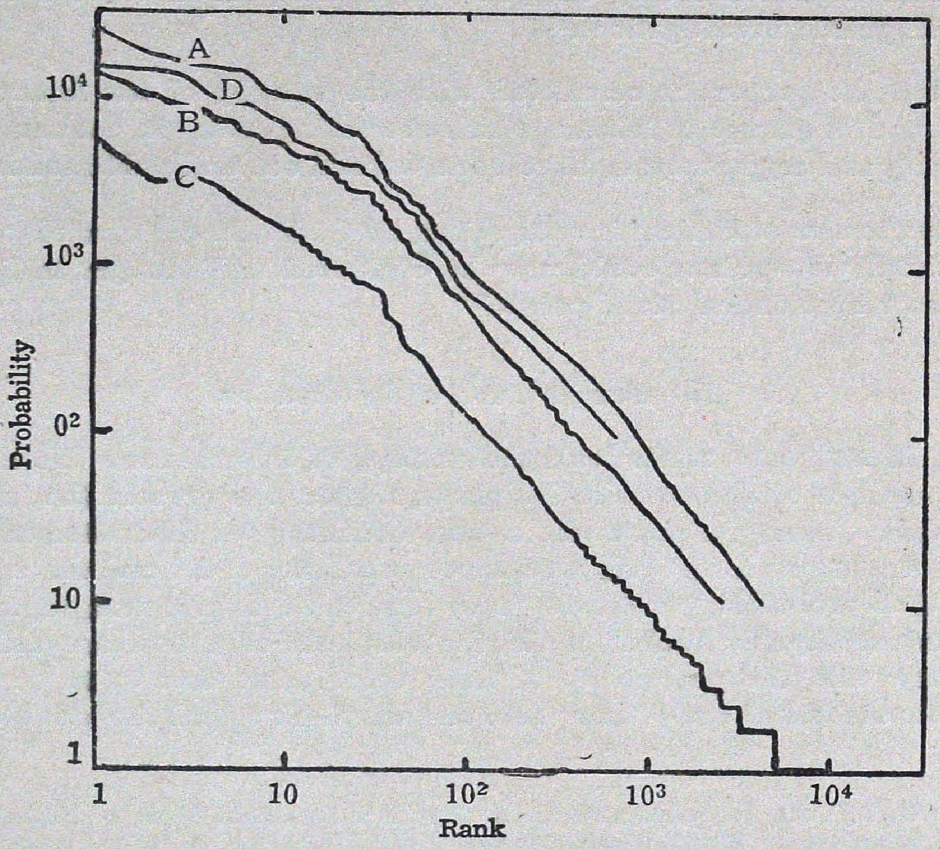


FIG. 1: Rank-probability of words from Norwegian texts (after ZIPF). A and B—UNDSET, C—AASEN, D—WERGELAND.

minimal principle of common behaviour, the principle of 'least effort'.[21] Fig. 1 shows the rank-probability of Norwegian word distributions, in the works of UNDSET, AASEN and WERGELAND.

Similar distributions are found in all the natural languages so far studied, but not, however, in the case of artificial constructions like Basic

21. G. K. ZIPF, *Human Behaviour and the Principle of Least Effort*, Cambridge, Mass., 1949.

English and Esperanto. The tendencies for equilibrium, working within languages and linguistic development, were viewed by ZIPF and ROGERS from the point of view of a "dynamic philology".[22]

Independent of the language in which the text is composed, there results, in terms of the text parameters, a *macroscopic* description of the text, which stands in direct analogy with the macroscopic thermodynamical quantities of state. MANDELBROT calls the constant 1/B the "informational text-temperature".[23] A higher temperature indicates that the available text elements are used well, the rarer ones among them being used in keeping with their probabilities, whereas in the case of a lower temperature the elements are badly used, the rarer elements being extremely rare.

In the majority of cases the text-temperature remains below 1; such texts, according to ZIPF, are said to be "open". The total number of text-building elements, R, cannot, in such cases, be estimated merely by a sample study of the text. Text-temperatures above 1 ("closed" texts) are not quite common.

Rare elements, in the case of "closed" texts, are used proportionately with greater probability than in the case of the "open" text and the disposable vocabulary is not so extensive. Examples of the cases with text-temperature above 1 are modern Hebrew (wherein the vocabulary is restricted on historical grounds, although the desired variability is quite considerable), and also the works of puristic poets with deliberate limitation of vocabulary.

First Order Characteristics

It has already been said that even with the elementary statistical methods, valuable insight into the structure of linguistic complexities can be obtained. A comprehensive sketch concerning the linguistic characteristics resulting from the computation of elemental probabilities has been given by W. FUCKS.[24] He exemplifies his methods with individual texts, idiolects as well as natural and artificial languages. Therein he distinguishes between the *first order characteristics,* which are to be calculated from the statistical moments (mean value, slope, flatness, deviation, entropy) defined

22. G. K. ZIPF, F. M. ROGERS, *Arch. Neerl. Phon. Exp.*, 15 (1935) 111.

23. The justification for this nomenclature is derived from the fact that the language model considered here is analogous to the ideal gas of Thermodynamics and the quantity B in the linguistic equation plays the same rôle as the reciprocal of the absolute temperature in the thermodynamic equation.

24. W. FUCKS, *Mathematische Analyse von Sprachelementen, Sprachstil und Sprachen,* Heft 34a of the Arbeitsgemeinschaft für Forschung des Landes Nordrhein Westfalen, Köln/Opladen, 1955.

as the ensemble-mean of the probability distributions of isolated text-elements, and the *second and higher order characteristics,* in the case of which the relationships *between* the text-elements come into play.

Among the first order characteristics figures the probability distribution of syllables found by FUCKS for words of special linguistic interest. The number of syllables z, the mean number of syllables $\bar{z}$ and the probability p_z of z-syllabic words have among them the relationship

$$P_z = \frac{(\bar{z}-1)^{z-1}}{(z-1)!\ \exp\ (\bar{z}-1)} \cdot ^{25} \quad (4)$$

It is presumed that this distribution gives rise to the universal law of word-building from syllables for all languages in which the concepts

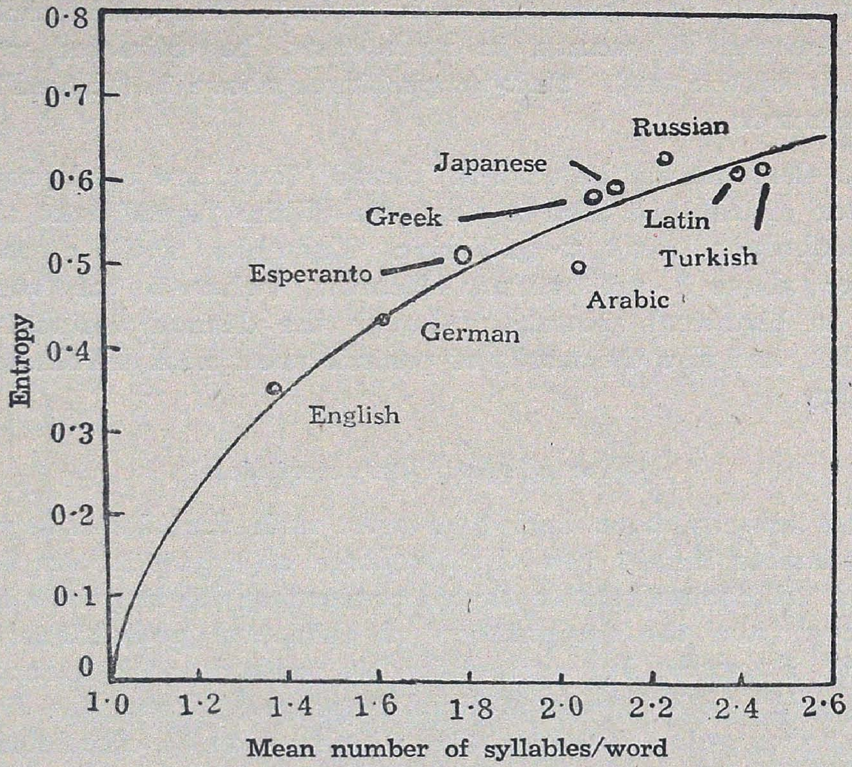


FIG. 2: Calculated and Observed values of Information-entropy as a function of the mean number of Syllables (after FUCKS).

'word' and 'syllable' are applicable. If from p_z the entropy of information H for the characteristic, number of syllables/word, is calculated by means of equation (1), the relationship between H and z, shown in Fig. 2, is found.

25. W. FUCKS, *Naturwiss,* 42 (1955) 10.

The values of entropy actually observed for nine different languages are shown by circles; (apart from Arabic, the result for which is probably vitiated by a too special choice of text), they are in striking conformity with the calculated values.

Nahordnung and Fernordnung[25a]

W. FUCKS has more firmly established the comparison of linguistic structures with the arrangement of molecules in gases, liquids and solids, by the adoption of BETHE's concepts of "Nahordnung" and "Fernordnung".[26] Thus a transition from the consideration of individual, isolated text-elements into groups of elements can be effected. In the place of the individual probabilities, p_i, will then appear the joint-probabilities, p_{ij}, which deal with every *two* elements at the same time, or p_{ijk} for every *three* elements, and so on. At the level of the phoneme, a text in the first order of approximation can be conceived as a *Markoff* process,[27] that is, as a stochastic mechanism, in which there exist the strongest statistical connections between the elements immediately *following one another*.[28] The phonemic properties of the Nahordnung or proximate relations ("environment") of a text can, therefore, be approximately represented by a *Markoff*-chain.

Investigations with groups of more than two text-elements are indispensable for the clarification of phoneme distribution and syntactical relationships; they are not, however, immediately clear. FUCKS has, therefore, made use of the concept of "free path" from atomic physics for the investigation of the properties of Fernordnung or distal relations. Instead of the text-elements themselves, in these cases, the *distances* between a text-element with the characteristic i (e.g., the dissyllabic characteristic) and the next element (or next but one, and so on) with the characteristic j (e.g., trisyllabic characteristic), are studied.

Disintegration of Morphemes

The statistically derived characteristics can be made use of for the synchronic as well as diachronic (historical) investigations. The pursuit of

[25a. The terms 'Nahordnung' and 'Fernordnung' respectively signify 'proximate relations' and 'remote or distal relations'. In other words 'Nahordnung' refers to such events whose probabilities depend upon the probability of an immediately preceding event. 'Fernordnung', on the other hand, refers to such events whose probabilities depend upon the probability of some event between which and the events in question there have been several other events.—*Tr.*].

26. W. FUCKS, *Biometrika*, 41 (1954) 116.

27. A. A. MARKOV, *Bull. Acad. Imp. Sci.*, St. Petersburg, 7 (1913).

28. O. H. STRAUS, *J. Acoust. Soc. Amer.*, 22 (1950) 709. Cf. also E. C. CHERRY, M. HALLE, R. JAKOBSON, footnote 17.

the characteristics over centuries back, however, meets with peculiar difficulties; it is indeed in no way certain that the elements whose characteristics are investigated, remain unchanged with the passage of time. R. B. LEES who examined this question in detail, could in the course of it show that there are certain morphemes (the "active colloquial root-morphemes") which can be looked upon as historical invariants and therefore are appropriate for diachronic descriptions.[29]

LEES, through his "glotto-chronological method", picks out from the morpheme inventory of a language belonging to a particular cross-section of time a partial collection, the elements of which can be identified as being in use at an earlier epoch of the language; thus a predominating vocabulary is arrived at, which is associated with the concepts recurring at all times ("cultural universals"), as for example, the names for the parts of the body, numerals, geographical states and simple actions. A given inventory N_o of such root-morphemes assumes an exponential relationship with time, that is, after an epoch of time t is elapsed, this inventory is reduced by morpheme disintegration to

$$N = N_o . \exp(-\lambda t) \tag{5}$$

The parallel to the radio-active disintegration of substances is quite obvious; the analysis of the products of morpheme disintegration ought to lead thus to the explanation of the lexical history, just as the analysis of the mineral products of disintegration lead to the clarification on the age of the earth's crust.

Investigations by LEES on 13 languages, for which there was sufficient diachronic material at his disposal, showed that 81% of the root-morphemes considered had an existence over a period of 1000 years. The constants of disintegration $(-\lambda)$ lay between 0.760 for the transition from Egyptian to Coptic and 0.854 for the transition from Old High German to New High German or from Old Nordic to Swedish.

The glotto-chronological method was applied with success for the determination of the period of life ('time-depth') of such languages, which sprang up from a common original language; in good agreement with the historical facts, a time-depth of 1.236 ± 0.246 millennia was shown for the pair of languages German-English, and of about 0.526 millennia for Osmanian-Azerbaijanian.

29. R. B. LEES, *Language*, 29 (1953) 113.

Diachronic Variations

The parallel between the structures of linguistic relations and the physical characteristics of structure meets with its limitation, where the organic development of languages becomes noticeable. Empirical individual languages are not closed systems having their foundations in themselves, but are "dynamic media",[30] layers of different co-existent systems intertwined into one another, which tend to have a mutual influence.[31] It proves, therefore, to be impossible to comprehend fully such a system synchronically (that is, by observations at a single point in time). One has rather to bring in a finite time-interval of analysis ("time perspective", according to FRIES and PIKE), if the constituent factors are to be understood.

G. v. d. GABELENTZ maintains that there are two antagonistic tendencies that come into play in linguistic reciprocal actions, namely, the motivation towards ease and the motivation towards clarity.[32] If the desire for ease is identified with an increase and the striving towards clarity with a decrease of the (relative) information entropy, it can be understood that a diachronic investigation of linguistic structure cannot be realised as a monotonic development, but as an up and down progression corresponding to the blossoming and degenerate periods respectively of a language.[33]

[I am much indebted to Dr. P. C. GANESHSUNDARAM for his excellent translation of my paper into English — W. MEYER-EPPLER.]

30. P. C. GANESHSUNDARAM, *Bull. Deccan College Res. Inst.*, 12 (1954) 415.
31. C. C. FRIES, K. L. PIKE, *Language*, 25 (1949) 29.
32. After E. OTTO, *Stand und Aufgabe der Allgemeinen Sprachwissenschaft*, Berlin (1954), p. 161. See also C. R. SANKARAN, P. C. GANESHSUNDARAM, B. CHAITANYA DEVA and A. D. TASKAR, 'A Study of Accent in Relation to the Alpha-Phonoid Theory, *Indian Linguistics*, 16 (1955) 198.
33. W. FUCKS (see footnote 24); P. MIRON, *Zur topologischen Struktur des Rumänischen;* Diss., Bonn (1954).

A CRITIQUE OF EXPERIMENTAL METHODS IN PHONETICS *

By

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It is generally understood that the science of Phonetics, like any other science, can be dealt with at different levels. At the highest level (that is, at the hypothetico-deductive level) it is a unified scientific discipline in itself; and at that level, *Phonetics* and *Phonemics* are not viewed in isolation. They together form a unified, inseparable, geometrical discipline, embraced by a single geometrical-physical theory, at the highest abstract level. Within the framework of such a theory, our usual classifications of speech-vibrations into the acoustical, neuro-physiological and psychological entities, and further into our familiar notions of consonants and vowels, break down.

We shall first of all, however, take up the more familiar field of phonetics here for our discussion, before we gradually go to the newer and—as it is often complained—unusual realms of phonetics.

Phonetics, as it is normally understood, is purely an empirical science without any unified theoretical background. At this empirical level, again, we can divide it into: (1) the so-called experimental phonetics and (2) the so-called "ear-phonetics" (in accordance with the usage of conventional linguisticians).

Or, it may be divided into: (1) acoustic phonetics and (2) articulatory phonetics, as is the modern tendency.

Usually the linguistician is satisfied with a workable mixture of "ear-phonetics" and "articulatory phonetics". For this reason we may call this workable mixture of the linguistician as "linguistic phonetics". However, he often requires the aid of acoustic measurements to test some of his ear-observations.

Both articulatory and acoustic phonetics have been known to the earliest grammarians like Pāṇini.[1] But even to this day it is articulatory phonetics in combination with ear-phonetics which has been widely in vogue

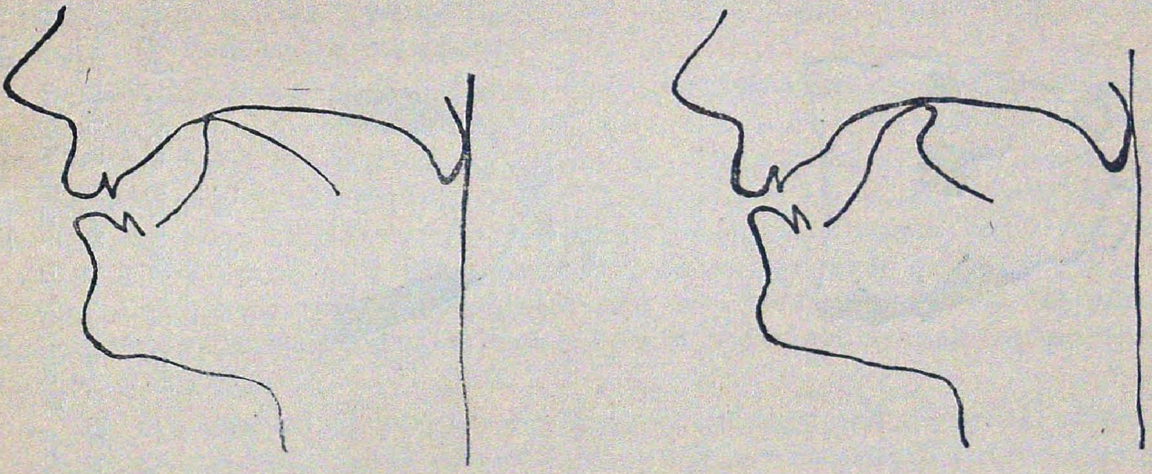
* Based on the opening talk delivered by the senior author of the Paper on 18th October, 1955, at the Autumn School of Linguistics (October-November, 1955) to the students attending a course of Laboratory Practice in Phonetics.

1. Cf. *Tulyāsya-prayatnam savarṇam* and the discussion thereon.

for the qualitative description of speech-sounds, particularly among linguisticians. Even Information-theorists, in dealing with phonetic elements, follow closely the linguisticians, so far as the descriptions of the speech-sounds go, although they pay very great attention to the acoustic composition of the sounds.

While studying the articulatory aspects of speech-sounds, we take into account the lip and tongue postions, the state of the vocal cords, etc., to enable us to give a fairly complete description of the mode and place of production of any speech-sound.

It has been realised, however, that, even in practice, it is not possible to give a purely articulatory description of speech-sounds without taking recourse to the description of acoustical phenomena.[2] For example, the fact that the 'same' vowel may be produced by different articulatory positions is sufficient indication that articulatory criteria, in the very nature of things, cannot furnish any very precise description of speech-sounds, if precision is attempted at all.[3] Also, the question of the articulatory description of the Tamil sound ḻ appears to give rise to difficulties. Different scholars give different descriptions.[4]



a b

FIG. 1. Showing non-retroflexed and retroflexed ḻ.

2. How can we describe, for example, aspiration in purely articulatory terms? (Cf. in this connection C. R. SANKARAN, P. C. GANESHSUNDARAM, B. Chaitanya DEVA and A. D. TASKAR, A Study of Accent in relation to the Alpha-phonoid Theory, Dr. Suniti Kumar Chatterji Commemoration Volume, *Indian Linguistics*, Vol. 16 (1955), pp. 196-203.

3. Cf. Prof. G. Oscar RUSSELL, Synchronised X-ray, oscillograph, sound and movie experiments, showing the fallacy of vowel triangle and open-closed theories, (*Proc. II Intern. Congr. Phon. Sciences*, London, 1935, pp. 198 ff.). See also C. R. SANKARAN, *Phonemics of Old Tamil, DCMS, No. 7*, 1951, pp. 12 and 13.

4. Cf. for example, Kamil ZVELEBIL's review (*Archiv Orientalni*, vol. 23, 1955, pp. 281-282) of C. R. SANKARAN's *Phonemics of Old Tamil*, p. 8.

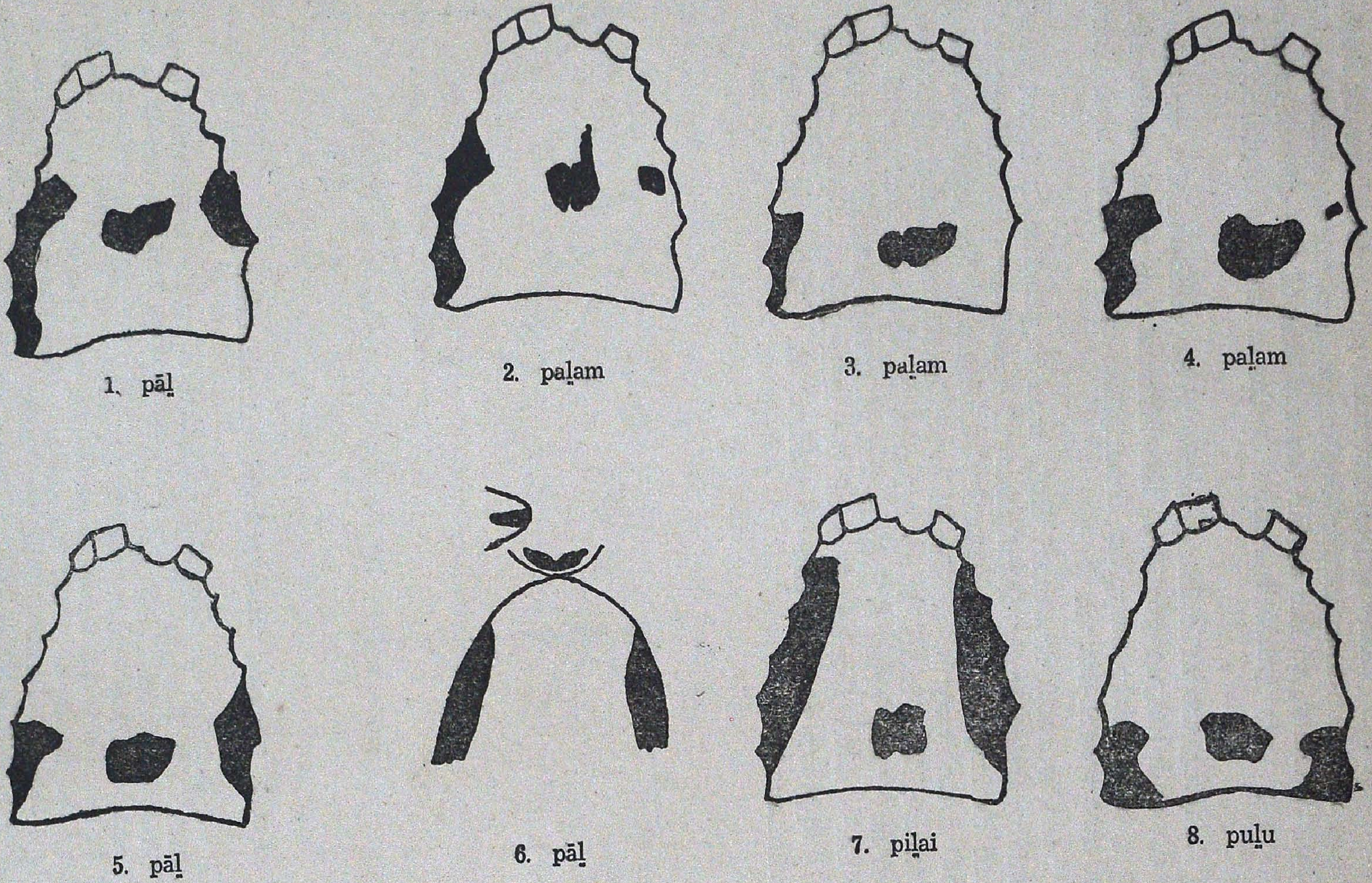


Fig. 2. Showing groove (especially in 2, 3, 4 and 7)

(Tracings reproduced from O. Svarny and Kamil Zvelebil, "Some Remarks on the Articulation of the 'Cerebral' Consonants in Indian Languages, Especially in Tamil, *Archiv Orientalni*, 23 (1955), Figs. 56-63, pp. 414-415, with the kind permission of the authors).

In fact, if an attempt is made to produce this sound, without being particular about the position of the tongue, we find that the sound can be produced within a whole range of tongue positions.[5] Describing this speech-sound, therefore, in terms of articulatory positions and movements, we can say that the Tamil l̤ is a post-alveolar or retroflexed (voiced or voiceless), strongly lateralised, weak groove-spirant. (What is it acoustically? Obviously, further precision investigations are necessary to discover its acoustic peculiarities). This indifferent voicing-non-voicing and retroflexion-non-retroflexion is very significant, since we often find in the vulgar dialects of Tamil and Malayalam a tendency either to pronounce l̤ like the retroflex lateral ḷ or like y. (ḷ is very common in the Tamil areas and y is found among the Moplah speakers of Malayalam in Malabar). Often too, instead of the retroflex ḷ we hear the retroflex spirant ṣ, particularly among children. The indifference with which the single speech-sound l̤ has either retroflexion or not, voicing or no voicing, is again another indication that descriptions based on articulatory criteria can at their best be inaccurate, if not totally false.

Further, during the process of hearing, it is more often the purely acoustical vibrations that give rise to the 'picture', so to say, of individual speech-sounds in the perceptual centre of our mind, irrespective of the articulatory finesses or otherwise.

Lest too much precision should be expected from acoustic criteria, as against the much grosser articulatory ones, it may here be pointed out that it has also been established by empirical observations in psycho-acoustic and communications laboratories that a sound, which is not identified by the hearer when it is heard in isolation without the hearer being face to face with the speaker, is often easily recognised at least either (1) when the lip-movements, etc., of the speaker are seen by the hearer, or (2) when the particular speech-sound is uttered in a meaningful chain with other sounds, or (3) both.

In the light of all this, we see that articulatory and acoustical criteria alone, at the empirical level, cannot furnish any precise description of speech-sounds. It is in fact the "phonetic context" characterised by the psychological and neuro-physiological background acquired during the process of speech-learning, that holds the key to our perception of speech-sounds.[6] Anyone attempting to go into the 'fundamentals' cannot afford to overlook these questions.

5. See Fig. 1 and Fig. 2.

6. Cf. C. R. Sankaran and P. C. Ganeshsundaram, Structure in Speech—The Physical Reality of the Phoneme, with an addendum on the very nature of structure and the problem of existence by B. Chaitanya Deva, *Nachrichtentechnische Fachberichte*, Bd. 3, Information Theory, 1956, pp. 63-71.

However, for a gross linguistic analysis at the ordinary empirical level, most of these 'fundamental' questions may be, and usually are, ignored.[7]

Let us now see what methods are employed in determining the articulatory criteria for the description of speech-sounds.

The articulatory movements or positions are studied in the following different ways. If no acoustic quantity is to intervene, the methods at our disposal for such studies are as follows:

(1) Cinematography — for studying the lip and tongue movements.[8]

(2) Palatography — for studying the tongue positions for various alveolo-palatal consonants. This provides a fairly good estimate of the spread of the tongue at the points of contact with the roof of the mouth. When photographed, it gives the projection of the area of contact in the horizontal plane.[9]

(3) X-ray photography—In the sagittal section, how the tongue carries itself, with respect to the other parts of the mouth and its cavity, can be seen in a vertical plane.[10]

(4) Laryngoscopy — to study the vibrations of the vocal cords, both visually as well as cinematographically.[11]

Certain other measurements take the acoustic factors into consideration. In order to estimate at what frequency the vocal cords are vibrating (instead of merely knowing whether the vocal cords are vibrating or not), for example, we have to turn to acoustic measurements. Acoustic measurements can be made with many different types of instruments, some of which are of the most recent development.

But, we confine our attention here to some of the classical methods in Laboratory Phonetics only, reserving the modern developments for a projected Monograph in the near future.

7. As, for example, in the methods of descriptive linguistics. As a brilliant work in this direction, we recommend the interested reader of this paper to H. A. GLEASON, *An Introduction to Descriptive Linguistics*, Henry Holt & Co., New York (1955). Cf. also its able review by F. B. AGARD and W. G. MOULTON, in *Language*, 32 (1956) 469-477.

8. Vide PANCONCELLI-CALZIA, *Experimentele Phonetik*: Strobostereo-photography.

9. Vide L. KAISER, The Shape of the Palate and its Effect on Speech-sounds, *Proc. II Interna. Congr. Phon. Sciences*, pp. 22ff.; Carlo TAGLIAVINI, *Introduzione alla Glottologia*, Bologna, 1950; Eugen DIETH, *Vademakum der Phonetik*, Francke Verlag Bern, 1950; PANCONCELLI-CALZIA, *op. cit.*; also F. WETHLO, Experimentelle Lautforschung im Gelände, *Zeits. f. Phonetik*, vol. 1, 1947, pp. 24ff.

10. G. Oscar RUSSELL, *op. cit.*

11. PANCONCELLI-CALZIA, *op. cit.*, (Laryngo-stroboskopie).

One of the most frequently used acoustic-phonetic instrument of the classical type is the kymograph:

It is used for studying:

(1) the vibrations of the mouth cavity.
(2) the vibrations of the nasal cavity.
(3) the vibrations of the larynx.
(4) the vibrations of the chest (breathing movements), etc.

Of all the different classical methods used in Laboratory Phonetics mentioned above, the linguistic phonetician most frequently utilizes: the kymograph and the artificial palate.

We shall first describe at some length these two means, before we take up other refined (acoustic phonetic) methods for our study.

What is that we can expect from these, what we have called, classical laboratory methods and techniques in phonetic research?

In SCRIPTURE'S words[12] the kymograph responds through the membranes of the attached tambours only to the change in air pressure; it does not respond to the vibrations of microphonic speech. The whole apparatus thus registers only the mass movements of the air from the mouth, nose, etc., and nothing else.

In all kymographic work the maximum accuracy that can be normally obtained is only about 50%. For, many errors are introduced into the system by several factors, such as, for example, the yielding of the walls of the rubber tubing, the multiple reflections along the tube and at the two extremities, etc., further the inertia of the rubber or mica diaphragm and that of the stylus as well as the friction of the point of the stylus at the surface of contact on the drum are all contributory to the distortion of the original sound-waves. For any high precision recording, therefore, the kymograph is highly unsatisfactory. It is unsatisfactory also particularly because there are no known means (and it is difficult to find any new means) of estimating the error involved due to various factors, thereby leaving the door closed for any correction.[13]

12. The Nature of Speech, *Proc. II, Interna. Congr. Phon. Sciences*, London, 1935, pp. 209 ff.

13. See in this connection, for a thorough treatment of the sources of error in different types of experimental phonetic investigation, Prof. Dr. Med. H. LOEBELL and F. WETHLO, *Fehlerquellen bei experimentell-phonetischen Untersuchungen*, Leipzig, 1931.

Also for a thorough treatment of the technical improvement of the kymographic method, see Vincenzo Cocco, *Sul comportamento delle membrane nella registrazione dei suoni della voce, Contributi del Laboratorio di Psicologia*, Serie Ottava, Milano, 1940, pp. 511 ff.

The so-called quantitative measurements made on the kymograph, therefore, are at best *qualitative indications* showing in a rough way what apparently seems to take place in the mouth cavity, nasal cavity, larynx, lungs, etc.

Coming now to palatography, we find that there aren't any highly refined methods possible. The normal methods of preparing an artificial palate are, in a sense, clumsy. But a skilled hand can make almost perfect models by sheer manual dexterity.

Almost all the references we have at our disposal in this connection, suggest the use of either hard rubber or metal for the material used in preparing the artificial palate.[14] Plastic palates can also be prepared.

The type of pigment to be used is given variously by different authors.[15]

A detailed instruction for preparing an artificial palate is given by F. Wethlo.[16] We are indebted to Dr. G. V. Desai and Dr. B. S. Shinde, Dental Surgeons, for having so kindly prepared artificial palates for a few of the Fellows at the Linguistic School, using a method similar to the one commonly practised in the preparation of dentures.

In conclusion, we wish to bring into relief our stand, which has been emphasised in all our work, that steady state articulatory and acoustical criteria alone, at the empirical level, cannot furnish any precise description of speech-sounds. Since, however, even different dynamic articulatory movements[17] may yield the same acoustic resultants, we have to consider a description in terms of only dynamic acoustical quantities.[17a] That is, if a

14. See for example, Poirot, *Handbuch der Physiologischen Methodik*, 3 Bd., 6. Abteilung, Die Phonetik, Leipzig, 1911, pp. 45-48—for metal or hard-rubber palate covered with "ouranine."

15. As for example, 'mit Brei aus Mehl und Gummi arabicum bestrich', 'Grutzner bestreicht die getrocknete Zunge mit einer Aquarellfarbe (carmin, chinesische Tusche, Ultramarinblau o. dgl.)', 'Gutzmann bestreicht umgekehrt den Gaumen mit farbe' (Poirot, *op. cit.*, pp. 45-48), 'magnesia' (Panconcelli-Calzia, *op. cit.*, p. 69), white powder of 'Mehl, Magnesium, usw.' (E. Dieth, *op. cit*, p. 26).

16. F. Wethlo, *Zeits. f. Phon.*, *op. cit.*, p. 26.

17. Cf. G. Oscar Russell, The Mechanism of Speech *JASA*, 1 (1930) 93 ff; cf. also, P. C. Ganeshsundaram, The Vowel-Triangle and the Formant-Structure, *Indian Linguistics*, vol. 18 (in Press).

17a. Cf. also C. R. Sankaran, A Philosophical Analysis of the Alpha-Phoneme Theory in Relation to the Problem of Speech-Structure, *BDCRI*, 14 (1952), p. 94, footnote. Cf. too, C. R. Sankaran, et al., Reversed Speech and the Alpha-Phoneme Theory, *BDCRI*, 17, (1955), 2, footnote 3.

vowel is considered as a vector[18] the consonants will just be transitions of the vector from one value to another.[18a]

It is also now clearly seen that the bedrock of our entire work,[19] namely, the assumption that the Vowel and the Consonant are not mutually exclusive,[20] is exemplified even by the latest experiments of André MALECOT, F. S. COOPER, et al, within the empirical frame of reference,[21] where the omission of formant transitions results in the loss of the consonant.

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1. SCRIPTURE, *Experimental Phonetics*, (Washington, 1906).
2. R. T. HOLBROOK and F. J. GARMODY, *X-ray Studies of Speech Articulations.*
3. FLETCHER, *Speech and Hearing.*
4. G. W. GRAY, *Studies in Experimental Phonetics*, 1936.
5. Carl STUMPF, *Die Sprachlaute*, Berlin, 1926.
6. F. J. CARMODY, *An X-ray Study of Pharyngeal Articulation*, Univ. of Calif. Press, 1941.
7. Univ.—Prof. Dr. Wilhelm BRANDENSTEIN, *Einführung in die Phonetik and Phonologie*, Vienna, 1950.
8. Walter RUTH, *Neuere Methoden phonetischer Forschung*, Vienna, 1949.
9. Paul MENZERATH, *Koartikulation, Steuerung und Lautabgrenzung*, (in collaboration with LACERDA), Berlin-Bonn, 1933.

18. Vide P. C. GANESHSUNDARAM, A Cascade Modulation Theory of Speech-Formants, *Z. f. Phon. U. allgem. Sprachwis.* (in Press).

18a. Cf. also in this connection Prof. A. GEMELLI's following interesting observation (referred to by C. R. SANKARAN, in his Theory of the Alpha-Phonoid, *BDCRI*, 10 (1950) 62): "There are cases in which a vowel stops several times to originate various phases of a consonant."

19. Cf. P. C. GANESHSUNDARAM, A Qualitative Definition of the Perfect Consonant and the Perfect Vowel, *BDCRI*, 14 (1953) 243-48; also P. C. GANESHSUNDARAM, The Structure of Speech-Sounds, *BDCRI*, 17 (1955) 116-121; cf. too, P. C. GANESHSUNDARAM. The Process Existence Concept and The Structure in Speech, *BDCRI*, 18 (Taraporewala Memorial Volume) (in Press).

20. Cf. C. R. SANKARAN, On Defining The Alpha-Phoneme, *Current Science*, 1 (1944) 11-12.

21. Cf. André MALE'COT, Acoustic Cues for Nasal Consonants, *Language*, 32, No. 2, Part 1 (1956), 274-284, see esp. pp. 280-281.

AN EXPERIMENTAL STUDY OF THE NATURE OF ACCENT

By

A. D. TASKAR, *Coonoor*

Introduction

The characteristics of vowel-sounds have been more extensively investigated than any other subject connected with speech in the field of linguistics. After a careful study of the literature on the structure of vowel-sounds it will be found that though at every stage of the investigations there has been a definite improvement in the understanding of vowel-sounds, still the definition of a vowel-sound is not perfect. A definition of a vowel-sound should be such as to be valid under all conditions of speech[1] and at the same time it should be very easy to operate upon. In short it should be able to give an exact idea by easy manipulations about the changes in the structure of a vowel-sound if there is change in the initial conditions of speech. The harmonic theory of a vowel-sound, though, may serve as basis for distinguishing the various vowel-sounds under normal conditions of speech, still, it cannot help visualising the changes under modified conditions.

The inadequacy of the present definition of a vowel-sound was realised by SCRIPTURE[2] and GEMELLI,[3] and they tried to give appropriate suggestions. But not much headway was made in the direction of understanding the speech phenomenon, for their work was still within the original framework of empiricism. At this stage SANKARAN[4] felt the inadequacy of the present theory of speech-sounds more strongly and formulated the Alpha-Phoneme theory.

According to a technical aspect of his theory a speech sound is considered to be a multi-dimensional entity,[5] of which the three basic dimensions are pitch, duration and amplitude. It is possible to verify the assumptions contained in the two theories of speech-sounds by arranging an experi-

1. GANESHSUNDARAM, P. C. A qualitative definition of the Perfect consonant and the Perfect Vowel, B.D.C.R.I. (1953), vol. 14, p. 243.
2. SCRIPTURE, E. W. Puff and Profile theory of vowels, *Nature* (1935); 136, 455-6.
3. GEMELLI, A. Nouvelle contribution ala connaissance de la structure des voyelles, A.N.P.E. (1938), vol. 14, pp. 126-164.
4. SANKARAN, C. R. The theory of the Alpha phonoid, *B.D.C.R.I.* (1950), vol. 10, pp. 61-67.
5. SANKARAN, C. R. A contribution to the theory of speech structure, *B.D.C.R.I.* (1951), vol. 12, pp. 217-240.

ment where the same speech-sound is uttered and recorded under both normal and modified conditions of speech. It would be of great interest if the changes in the structures of vowel-sounds are studied under conditions which are familiar to us. In everyday conversation we find speech-sounds being uttered under different conditions. This phenomenon we term as Intonation, where the basic pattern of the speech-sound remains the same but modifications are brought in due to accent, voice-quality, emotion, mental-attitude etc.

Accent has been described as the soul of speech. It produces unity of words and sentences in speech. The idea of bringing certain facts into prominence means special emphasis on the particular words. It acts as a living and life imparting soul within and with the word, exerting an influence of the whole language.[6] Many important laws, VERNER's law for example, have been based upon the action of accent in modifying the structure of vowel-sounds.

In order to understand the physical basis of accent many investigations are carried out but still there is a difference of opinion as to what exactly constitutes accent. It would appear that the important role of accent in human speech was never properly understood because it was being viewed through a narrower angle. It was assumed that the changes due to accent occur in pitch and duration.

It is attempted in this investigation to present data on the changes in the structures of vowel-sounds by the consideration of both the theories and show that if a speech-sound is considered to be a three-dimensional entity it is possible to give an explicit explanation for the phenomenon of Accent[7] whereas it is not so by assuming the theory of harmonic structure of speech-sound.

One language namely Telugu from the Dravidian group and one language namely Marāṭhi from Indo-Aryan group of languages are taken as representative members for illustrating these relationships. There is a supreme advantage here, for in these Indian languages the original accent of any speech form can be significantly altered by either stressing the particular form or by the addition of a group of speech sounds.

6. SANKARAN, C. R. Accentual variation, *Journal of Oriental Research, Madras,* (1935), vol. IX, p. 310.

7. Two independent theories for giving proper explanation of accent are being considered by phoneticians. The first propounded by ROUSSELOT lays that accent is due to greater pressure by the organs of breathing while the second one of FORSCHHAMMER brings about that the vocal-cords properly utilizes the breath resulting in a tone of higher strength. The first assigns the cause to the organs of breathing while the second to the organs of phonation.

Material and Method

To carry out the present investigation the following experiment was arranged.

The subject whose speech was to be recorded was seated in a room 20′ × 10′ × 18′ which had been made partially sound-proof by arranging a convass curtain about 3″ from the wall and 1 ft. from the ceiling. The microphone, a Turner velocity-dynamic model, was placed at about 1 ft. from the subject. The output of the microphone was fed to an amplifier and hence to the Y beam of the Cathoderay Oscilloscope (CRO-Cossor 1049 double beam Industrial type). To the Y beam of the CRO was fed the output of a standard stabilised electrically maintained tuning fork oscillator at 1,000 c/s. The recording was done by means of an Avimo Camera 35/100/60, which was attached to the CRO with a light-tight hood, and the 35 mm. continuous recording film in the camera was electrically run at a speed of 20″/sec. The recording process was controlled through light signals sent to the subject by the person operating the camera. The subjects were requested to speak before the microphone sets of words in a normal way. The same sets were repeated by accenting the required sounds namely *u, i, e,* The subjects were requested to speak before the microphone several times before actually the records were taken, to eliminate as far as possible the inhibitions, if any, imposed by the apparatus. Similarly, remembering that a new language pattern superimposed upon the native-pattern is very often influenced by the latter, the subjects who obliged to give records of Telugu and Marāṭhi speech-sounds had respectively Telugu and Marāṭhi as their mother-tongues. One telling example from Marāṭhi was recorded and studied for the purposes of indicating the changes produced in the original form by the addition of a group of speech sounds. The example in question is *puṣkaḷ* in which a cluster group occurs, and is compared with two 'non-sense forms' (which have no actual occurrence in the stream of speech), namely *puṣaḷ* and *pukaḷ* in which either the one or the other individual member of the cluster in *puṣkaḷ* occures separately.

The analysis of vowel-sounds was carried out by assuming that the Fourier Series properly describes a vowel profile. For the purposes of analysis of vowel-sounds 24 ordinates were taken. The scheme of finding out the amplitudes was followed up from WHITTAKER and ROBINSON.[8]

Measurements of ordinates of vowel-profiles for Fourier analysis were made by the Projection method. The film on which the sound-waves were recorded was projected on to a very fine graph sheet by a magnifying lense.

8. WHITTAKER, E. and ROBINSON, G. *The Calculus of Observations*, Blackie & Son, Ltd., Lond., Glasgow, pp. 273-278.

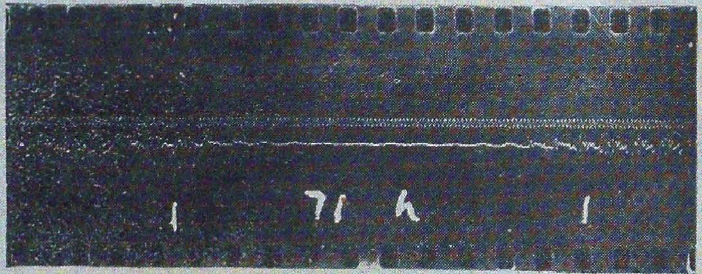

Fig. 1. āhā (neutral)

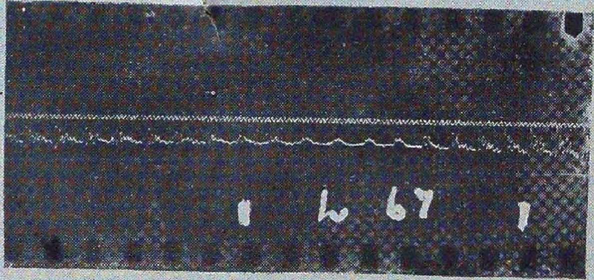

Fig. 2. āhā (in anger)

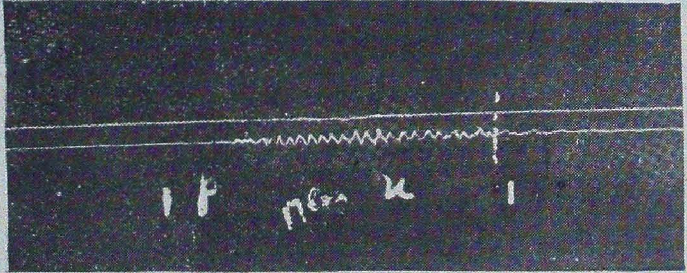

Fig. 3. puṣəḷ

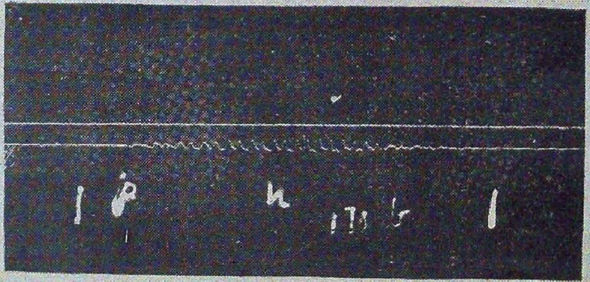

Fig. 4. pukəḷ

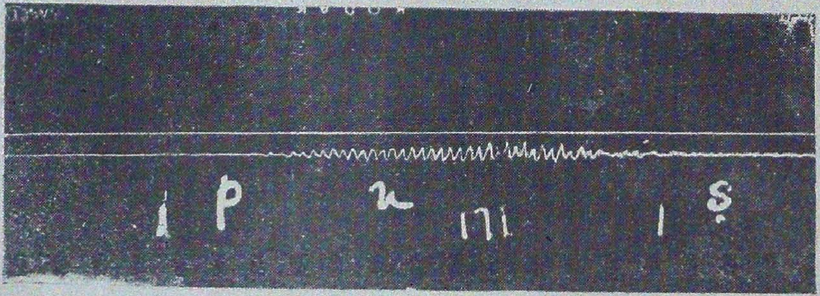

Fig. 5. puṣkəḷ

The ordinates of this magnified profile were measured at equal intervals. Three consecutive profiles which showed almost a constant form were selected for the purposes of analysis. The durations of vowel-sounds were measured under a Traversing Microscope.

RESULTS

The results of the analyses of vowel-sounds are presented as 1. Fourier analysis, 2. Measurements of pitch, duration and amplitude, and 3. Changes due to the addition of a group of sounds.

1. *Fourier analysis*

(i) *Normal*—The amplitudes of the various partials are given in Tables IV and V for Telugu and Marathi respectively. The important characteristics of the figures are that there are three prominent regions of resonance for both Telugu and Marathi. Sometimes regions of higher frequencies are also seen but their amplitudes are negligible. The amplitudes have got different values for different sounds, and sounds of the same class. With respect to the number of regions of resonance the results are in conformity with those obtained by OBATA[9] for Chinese, Mongolian and other languages spoken in different districts of Japan, and also more recent investigations of STEINBERG[10] on American-English.

From the values of average frequencies given in Table I of the various regions of resonance it will appear that for Telugu vowel-sounds there are very slight variations in the first regions of resonance. It seems that different Telugu vowel sounds are to be distinguished from one another only on the basis of the frequencies of the second region of resonance. May be on the third or the fourth in some cases too. The frequencies of the regions of resonance for the same sounds in Telugu and Marāṭhi are not very much different from each other considering the variations in each category of sounds. The American vowel-sounds have frequencies for the second region which are to some extent equivalent to the third region of resonance of the two Indian languages. The first regions, however, compare very well.

9. i. OBATA, J. and TESIMA, T. Physico-phonetical studies of Chinese and Mangolian languages. The properties of vowels and consonants. *Proc. Imp. Acad., Japan,* (1934), X, No. 10.

ii. OBATA, J. and TAMARU, T. Physico-phonetical studies of sounds of spoken dialects in various districts of Japan and The Properties of Vowels and Consonants. *Japanese Journal of Physics* (1932), Vol. XIII, No. 1.

10. STEINBERG, J. C. Application of sound measuring instruments to the phonetic problems, *JASA,* (1934) vol. 6, p. 16.

TABLE I

Regions of Resonance

		TELUGU			MARAṬHI			AMERICAN ENGLISH		
		F_1	F_2	F_3	F_1	F_2	F_3	F_1	F_2	F_3
u	Normal	320	1194	1658	362	983	1500	336	902	2170
	Accented	452	1229	1810	373	746	1118	—	—	—
i	Normal	331	829	1161	285	669	959	295	2289	2963
	Accented	194	954	1643	281	1223	1878	—	—	—
e:	Normal	330	824	1538	414	904	1244	549	1880	2486
	Accented	407	1016	1524	411	822	1233	—	—	—

(ii) *Accented*—The amplitudes of the various partials are given in Tables IV and V for Telugu and Marāṭhi respectively. It will be seen from the comparison of the values of stressed and unstressed vowel-sounds that, in general, there is a rearrangement of regions by shifting of the prominence of the partials; the amount of shifting depending upon the pitch of the fundamental. There is no uniformity in shifting of the regions of resonance, sometimes the regions are shifted to the lower side of the partial and, sometimes to the higher side. The amplitudes of the various partials have considerably changed, some are increased and some are decreased.

Statistical analysis—The complete data were subjected to statistical analysis to find out other finer points of interest and the results are given in Table II.

It will be seen from the table of analysis of variance that all the important terms of interactions between the main effects except A-K (Accent-Kind) for Marāṭhi are not significant. The analysis, therefore, does not suggest any simple explanation for the changes due to accent in the structures of the vowel-sounds. The experiment thus appears to be inconclusive with respect to the hypothesis under consideration, but it suggests designing either a larger experiment, or one in which the error variation was more carefully controlled by the use of proper consonantal surroundings.

2. *Measurement of Pitch, Duration and amplitude*—

The values of pitch, duration and amplitude[11] of the stressed and unstressed vowel-sounds for both Telugu and Marāṭhi are given in Table III. It will be seen from the figures that the changes due to accent are found in all the three basic components. The pitch of the fundamental is invariably increased by accenting of the speech-sounds. But the behaviour with respect to duration and amplitude is not constant, some stressed sounds have decreased in amplitude and some in duration. The important fact that whenever there is a shortening of duration a lengthening of mean-square-root values of amplitudes follows, or vice versa, may be noted. The fact

11. When we come to the measurements of amplitudes, it is difficult to come to a conclusion as to the factor or factors that will clearly measure out changes in the amplitudes of frequency-component (or components). The commonest way of record has been of the pressure just outside the mouth, and this has been supplemented by occasional studies of the pressure changes in the chest during speech. The quantitative analysis by measuring the highest and the lowest points of a wave form from a base line, and taking half the length to mean amplitude of the wave. To maintain the 'specific-character' (according to A. Gemelli), the amplitudes of the various harmonic components of a wave-profile have been found out by Fourier analysis and mean-square-root has been taken to mean the amplitude.

TABLE II

Analysis of Variance

Source		TELUGU				MARAṬHI		
	D.F.	Sum of Sq.	Mean Sq.	F.	D.F.	Sum of Sq.	Mean Sq.	F.
Accent ..	1	121035	—	2·86	1	107933	—	3·36
Regions ..	2	8914643	4457322	105·51**	2	5372122	2686061	83·60**
Kind ..	2	414483	207242	4·91*	2	14903	7451	—
Accent-Regions ..	2	50581	25291	—	2	78360	39180	1·22
Accent-Kind ..	2	8048	4024	—	2	692083	346042	10·77**
Regions-Kind ..	4	95366	23842	—	4	98642	24661	—
Error ..	22	929430	42247	—	19	610484	32131	—
Total ..	35	10533586			32	6974527		

Where Accent means effect produced by stressing the vowel-sounds.
Kind means differences in the three vowels.
Regions means differences in the frequencies of the three regions of resonance.
Interactions (Accent-Regions, etc.) means changes in one with respect to the changes in the other.

** Significant $P < \cdot 01$

* ,, $P < \cdot 05$

TABLE III

			TELUGU			MARAṬHI	
			a	b	a*	c*	b*
Pitch (cycles/sec.)	u	Normal	144·9	175·4			
		Accented	196·1	256·4	207·5	186·4	154·9
	i	Normal	151·5	180·2	146·7		148·6
		Accented	180·2	205·1	189·6		186·4
	e:	Normal	144·9	185·2	148·6		127·9
		Accented	202·5	202·0	207·5		203·9
Duration (in seconds)	u	Normal	0·162	0·100	0·045		0·047
		Accented	0·200	0·125		0·026	
	i	Normal	0·175	0·150	0·041		0·182
		Accented	0·188	0·175	0·083		0·230
	e:	Normal	0·113	0·123	0·113		0·113
		Accented	0·105	0·134	0·121		0·121
Amplitude (in cm.)	u	Normal	0·596	0·737	0·124		0·109
		Accented	0·927	0·958		0·149	
	i	Normal	0·796	0·693	0·130		0·216
		Accented	1·122	0·641	0·114		0·137
	e:	Normal	0·720	0·752	0·160		0·171
		Accented	1·801	0·859	0·338		0·271

*(Note. The words used were pukaḷ (a), puṣaḷ (b) and puṣkal (c))

TABLE IV

Amplitudes of Normal and Accented Telugu Sounds

	[u]				[i]				[e:]			
	a		b		a		b		a		b	
	Normal	Accented	Normal	Accented	Normal	Accented	Normal	Accented	Normal	Accented	Normal	Accented
1	0·504	1·157	1·157	1·787	1·441	2·682	1·466	1·525	0·908	1·406	1·647	1·442
2	1·626	2·767	1·857	2·537	1·926	2·303	1·751	1·146	1·589	5·666	1·649	2·336
3	0·736	0·663	0·565	0·773	0·670	0·207	0·422	0·283	0·953	0·257	0·580	0·907
4	0·577	0·710	0·507	0·382	0·191	0·285	0·082	0·155	0·454	1·514	0·283	0·199
5	0·462	0·289	0·292	0·607	0·582	0·422	0·353	0·294	0·722	0·722	0·610	0·169
6	0·445	0·333	0·082	0·160	0·354	0·414	0·058	0·308	0·187	0·812	0·228	0·192
7	0·167	0·175	0·109	0·231	0·571	0·983	0·149	0·147	0·042	0·361	0·088	0·088
8	0·179	0·242	0·054	0·274	0·300	0·647	0·120	0·147	0·447	0·287	0·303	0·116
9	0·135	0·138	0·191	0·152	0·407	0·395	0·275	0·212	0·465	0·777	0·298	0·413
10	0·087	0·257	0·127	0·136	0·273	0·278	0·311	0·675	0·473	0·574	0·402	0·291
11	0·016	0·241	0·052	0·282	0·398	0·352	0·160	0·641	0·606	0·348	0·401	0·255
12	0·017	0·130	0·008	0·023	0·221	0·619	0·071	0·221	0·430	0·212	0·047	0·211

TABLE V

Amplitudes of Normal and Accented Marāṭhi Sounds

	[u]			[i]				[e:]			
	Normal a*	Accented c*	Normal b*	Normal a	Accented	Normal b	Accented	Normal a	Accented	Normal b	Accented
1	0·278	0·306	0·534	0·228	1·139	0·794	1·032	0·477	0·905	0·943	0·872
2	1·263	1·693	1·022	1·167	0·477	2·308	1·046	1·015	3·435	0·603	2·759
3	0·372	0·157	0·280	0·744	0·280	0·056	0·399	1·214	0·410	1·454	0·392
4	0·114	0·250	0·075	0·143	0·008	0·654	0·361	0·130	1·422	0·443	0·918
5	0·231	0·041	0·161	0·282	0·075	0·113	0·088	0·331	0·519	0·065	0·103
6	0·084	0·221	0·406	0·198	0·095	0·327	0·110	0·436	0·594	0·495	0·339
7	0·326	0·030	0·268	0·389	0·300	0·261	0·102	0·515	0·375	0·213	0·257
8	0·084	0·176	0·131	0·091	0·093	0·298	0·051	0·179	0·716	0·113	0·561
9	0·046	0·156	0·088	0·263	0·186	0·010	0·256	0·537	0·325	0·375	0·256
10	0·438	0·141	0·100	0·300	0·107	0·149	0·255	0·114	0·367	0·328	0·066
11	0·078	0·161	0·097	0·060	0·257	0·195	0·302	0·133	0·361	0·342	0·491
12	0·041	0·010	0·037	0·035	0·167	0·020	0·107	0 050	0·052	0·020	0·224

* The words used were (*pukaḷ*) a, (*puṣaḷ*) b and (*puṣkaḷ*) c

that a shortening of duration is accompanied by a corresponding lengthening of amplitude clearly shows why J. Muyskens[12] failed to understand the exact nature of accent.

3. The sound [u] in both the words *pukaḷ* and *puṣaḷ* is compared with their correspondant [u] in *puṣkaḷ* (cf. Tables III and IV). The pitch of the fundamental of the sound [u] in *puṣkaḷ* is more than that of [u] in *puṣaḷ*. and less than that of [u] in *pukaḷ*. The value of duration of [u] in *puṣkaḷ* is not very much less than that of the same sound [u] in the other two forms but the meanroot-square value of the amplitudes is more than that for both the [u] sounds in *pukaḷ* and *puṣaḷ*.

DISCUSSION

It will be seen from the results of the experiment that under modified conditions introduced by stressing of vowel-sounds because of irregular changes it is neither possible to predict nor possible to explain the nature of accent. It may appear that the objections raised by Scripture with respect to the number of ordinates to be used and the possibilities of committing errors in measurements even by using the trouble saving mechanical devices are quite genuine. On the other hand if it is considered that a speech sound is a three dimensional entity it leads to better understanding of the structures. Since the changes due to accent are found in all the three variables it is possible to give an easier explanation of some of the common speech phenomena. In the present case it can be pointed out that the two theories trying to give explanation of accent are correct only when both are together taken. There are no water-tight compartments in the matter of the changes so as to warrant the statement that changes due to accent are noticed only in the changes of pitch or in the changes of duration. The separate existence of the two theories to explain the nature of accent hitherto clearly indicates that it was never realised by earlier phoneticians that there can be also simultaneous amplitude variations. This has led to uncertainty in the field of physical phonetics as to the exact nature of accent. It will be seen that both the organs of breathing and phonation play equally an important part in producing the effect of accent. The organs of phonation cause a change in the tone of the sound. Similarly the organs of breathing cause a change in duration and amplitude. Thus the action of the two organs responsible for producting the change is simultaneous and is exhibited in the changes in all the three basic compo-

12. Muyskens, J. An Analysis of Accent in English from Kymograph records. *VOX* (1931), vol. 17, pp. 55-65.

nents. Since recognition of vowel-sounds in terms of regions of resonance with a limited number of ordinate measurements cannot be considered to be a sound criterion, it is intuitively suggested that as the three basic components can very well describe the changes in the structure of a vowel-sound and as it is possible to measure out the changes in these dimensions, the 'motion' of a vowel-point can be described as a composite function of these three variables. As the variables assume different values the function will describe a surface in three dimensions. The exact nature of this surface can be determined by measuring out the changes in the three components under all the possible modifications that may be imagined. It has already[13] been pointed out that vowel sounds behave as a group, i.e., the changes with respect to any modification are similar for all the vowels. The problem is thus simplified because one need consider only one specific vowel for studying the changes. It is hoped that further work on the lines indicated above may bring out some interesting facts about the structure of vowel-sounds.*

13. TASKAR, A. D. Vowel length. *BDCRI*, (1952), vol. 12, pp. 252-256.

* The author has great pleasure in acknowledging his indebtedness to Professor C. R. SANKARAN, Deccan College Post-Graduate and Research Institute, for his valuable help and advice in the preparation of this paper.

SOME NOTES ON THE HISTORY OF THE KITE IN INDIA AND OUTSIDE

By

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In the article on *"Kite-flying"* in the *Encyclopaedia Britannica* Vol. 13 (1929), p. 421, we get the following remarks about *Kites*:—

"The tradition is that *Kites* were invented by Archytas of Tarentum *four centuries before* the Christian era, but they have been in use among Asiatic peoples and Savage tribes like the Maoris of New Zealand from time immemorial."

We are further informed in this article that *"Kites' Day"* is celebrated in China on the *9th day of the 9th month.*

The above remarks do not give us any history of Kites in India or other Asiatic Countries. I record, therefore, some notes below which may clarify this history, especially with regard to India.

In 1952 I made inquiries with my friend Professor Dr. Vittore Pisani of the University of Milan (Italy) about the history of *Kite-flying* as recorded in European sources. Dr. Pisani was kind enough to reply to my inquiries in his letter of 23-6-1952 as follows:—

"As for Kite-flying I can give you only very scanty information. I don't know the works by J. Lecornu, *Les cerfs volants,* Paris, 1910, and F. M. Feldhaus, *Die Technik der Vorzert,* which possibly contain some hints to the history of *Kite-flying* and are quoted by Mario Pascal at the end of his paper on *Kite* (Cervo volante) in the *Encyclopedia Italiana,* Vol. IX, p. 862 ff; an article by C. F. Marwin, *The mecaniques and celebries of Kites* (*Monthly Review, Washington,* 1897) is quoted in the anonymous article on Kite (Drachen) in *Der Grosse Brockhaus,* 15 ed., Vol. 5, p. 66f. From Brockhause, I learn that *Kites are known since* 1450 *in North-Europe as child-plays:* this may hint to a MS of XV Cent. quoted by Feldhaus (as I read in *Encyclopedia Italiana,* p. 863), where it is taught "Wie du einen Drachen artificialiter machen und regieren sollott" (how you can do artificially and direct a kite).—As for the ancients, we can infer the acquaintance of the Greeks with kite from a picture on a Greek vase now in the National Museum at

Naples (No. 3151; S. *Archaologische Zeitung*, 1867, p. 125 it may be of *V or IV Cent.* B.C.), where a maiden is shown playing with a triangular kite.—Moreover scholars are inclined to see a kite in the flying dove which Archytas of Tarent (430-348 B.C.) is said to have invented, in a rather confused passage of Aulus Gellius, Noctes Atticare X, 12: *"Sed id quod archytam......occulta concitum"*. Anyhow, if this was a kite it would mean that Gellius had no distinct idea of kites or did not well understand what the dove of Archytas really was".

According to Prof. L. Carrington Goodrich the *kite* originated in China in the 6th century A.D. (p. 114 of *Short History of the Chinese People*, New York, 1951). "The first verifiable reference is to its use at the siege of T'ai in 549, when the Liang emperor sent one aloft to inform his friends outside the city of his plight. The enemy noticing it, ordered their best archers to bring it down—according to Laufer, the first case of anti-aircraft warfare (pp. 34-37 of *Prehistory of Aviation*, by B. Laufer). The use of kites spread to Muslim lands in the seventh century, to Italy in 1589 and to England[1] a few decades later."

If the use of kites spread to Muslim lands in the 7th century A.D., it is possible to suppose that the kites were introduced into India by the Muslims sometime after the 7th cent. A.D.

About the currency and history of kite-flying in Siam I gratefully record the following information kindly sent to me by my friend Prince Dhani Nivat, President of the Siam Society, Bangkok, in his letters dated 16-4-1952 and 7-5-1952:—

16-4-52—*"Kite-flying* has been recorded in the history of our race as having been indulged in by the national hero, Phra Ruang, who has been dated for the middle of the 13th century A.D. As with betel-chewing, it probably existed long before that, but we have no record of it. Of later years, although it has since been given up for several centuries past it formed part of the annual court ceremonies, which are still preserved in the present-day Cambodian Court."

7-5-52—"As for textual references concerning the indulgence in *kite-flying* on the part of our national hero, Phra Ruang, I should point out that the information is based upon oral tradition more than any authentic record. It is true that there is the *History of the North*, in Siamese,

1. In the *Shorter Oxford English Dictionary*, p. 1088 the word *Kite* in the sense of a toy is associated with the year 1664. The exact time of the introduction of the Kite into India is not known. The references to *Kite* in Marathi literature recorded in the present paper are later than A.D. 1500.

which is a collection of pseudo-historical traditions collected only as late as 1807 but it too was based upon oral traditions to a great extent.

Kiteflying in general, however, was recorded in the Palatine Law of Audhya promulgated in 1458 A.D., which unfortunately has not been translated into English except in parts."

It remains to be investigated whether kite-flying was introduced into Siam from China or originated in Siam itself. It is for students of Siamese history and culture to bring some evidence on this question. In the collection of Marathi manuscripts at Shri Samartha Vāgdevatā Mandir at Dhulia (Khandesh) my friend Shri V. S. Bendre found a Ms (*Bāḍ* No. 554) containing the following *abhanga* of Saint Ekanātha of Mahārāṣṭra (1533?—A.D. 1599):—

Page 20— "औट हाताची केली वावडी ।
सद्गुरुकृपा नीज सुभ गोत्र गो जोडी ॥ १ ॥
वावडी उडताहे कैसी ।
पूर्ण परिपूर्णा चिदाकासीं ॥ २ ॥
वैराग्याची जोडी च गाठी ।
तेणे विषयांत लपणे तुटी ॥ ३ ॥
प्रेमानंद नीज सूत्र तुटे ।
ते वावडी खाय कोल्हाटे ॥ ४ ॥
वासनेचे जडपुस तोडी ।
ते सीमा सांडोनी चढे चढी ॥ ५ ॥
वावडीचे चंग चारी ।
त्या नादें भरे अंबरी ॥ ६ ॥
चैतन्य वायू महा भरे ।
ज्ञानां गर्वाचे जोडिले फरारे ॥ ७ ॥
येका जनार्दनी ठेविली ठाई ।
दडलीसे सद्गुरूच्या पायीं ॥ ८ ॥"

The simile of वावडी (*vāvaḍī*) or Kite employed in this song in a spiritual context describes in detail the size of the Kite, its string, its upward flight in the sky with the upward and downward movements and the noise produced by these movements. In fact it is a vivid description of Kite-flying. If the above song is a genuine production of Saint Ekanātha, who died in A.D. 1599, we shall have to regard its reference to Kite-flying as the earliest one in Marathi literature so far known to me. Since Shri Bendre reported this reference to me he was in search of some other reference to Kite-flying

in St. Ekanātha's works. On 25-8-1956 he found the following very interesting reference to Kite-flying on p. 57 of *Ekanātha Gāthā* (edited by Outi):—

रूपक—वावडी

" २०६. अलक्ष केली **वावडी** ।
लक्षाचा दोर परवडी।
उडवती बारा चौदा गडी ।
भरली ती गगनीं उडी ॥ १ ॥
भली चंग **वावडी** ।
दादांनो भली चंग वावडी ॥ ध्रु ॥
औट हात सोडोनी दोरा ।
मध्यें कामटी लाविल्या बारा ।
आत्मस्थितीचा चंग उबारा ।
वावडी उडती अंबरी ॥ २ ॥
सहा चार मिळवोनी गडी ।
अठराजण सोडिती **वावडी** ।
एका जनार्दनीं त्याची जोडी ।
जनार्दनाचे पायीं गोडी ॥ ३ ॥ "

The metaphor of the वावडी or Kite given to us by St. Ekanātha in the above extract gives us the following details about *Kite-flying*:

(1) The Kite referred to was a very big one with a long rope.
(2) It was flown in the sky with the help of more than a dozen persons.
(3) Its frame was made of 12 bamboo strips.

It appears from these two references to Kite-flying by St. Ekanātha that this sport was current in the Deccan in the 16th century.

Corresponding to Saint Ekanātha's references to वावडी or Kite we find a reference to वावडी in the Marathi work called the *Grantharāja* by Dāsopant (A.D. 1551-1615). This work has been edited by Shri S. S. Deo for B.I.S. Mandal, Poona, 1914. The pertinent extract referring to वावडी reads as follows:—

Page 28— " **वावडी** उडे अंबरी ।
सूत्र तें धारकांचा करीं ।
तैसा वासना ठेऊनी घरी ।
तयां प्रति ॥ ८ ॥ (=॥ १०८ ॥)

(*Prakaraṇa III, Ovī* 108).

In these lines a Kite (वावडी) is mentioned as flying in the sky, its string (सूत्र) being held by a person.

Saint Tukārāma of Mahārāṣṭra (A.D. 1608-1649) whose literary career is assigned to the period, A.D. 1632-1649, refers to *Kite-flying* in the following *abhanga* or song, to which my attention was kindly drawn by my friend Shri V. S. Bendre:

" खुंटोनिया दोरी आपणियापांशीं ।
वावडी आकाशी मोकलिली ॥ १ ॥ "

[See p. 164 of *Tukārāma's Gāthā* (S. P. Pandit's edition reprinted by Bombay Govt.)—*Abhanga* No. 2802, which is also found in other editions of Tukārāma's *Gāthā*].

In the above lines Tukārāma refers to वावडी[2] or Kite with दोरी or string, let off in the sky.

Kavīndrācārya Sarasvatī of Banaras, the celebrated protégé of Emperor Shah Jahan (A.D. 1628-1658), composed a Hindi work called *"Kavīndrakalpalatā"* in praise of Shah Jahan, Dara Shukoh etc. I procured a copy of the Ms of this work from Bikaner and deposited it at the B.O.R. Institute some years ago. Prof. Upadhyaya of Agra had an occasion to go through this copy in May 1956. I am thankful to Prof. Upadhyaya for drawing my

2. The word वावडी meaning a *Kite* was current in the Marathi language in the 16th and 17th centuries and even later. It is also current today in some parts of Mahārāṣṭra. The modern Marathi word for *Kite* is पतंग. Whether this word in the sense of a Kite was current in the Marathi language in the 16th and 17th centuries remains to be investigated. In the following extract from a Marathi work called the *Yogasaṅgrāma*, composed by Shaikh Muhammad in A.D. 1645 the word पतंग is used as Shri Bendre points out but its exact meaning cannot be determined:—

" जैसा दिसे पतंगाचा रंग ।
धुतांच होय पाहा वोरंग ।
तैसें मुक्तबद्धाचें सोंग ।
जगीं मिरविती ॥ १२५ ॥ "

(*Prasaṅga* 16 of *Yogasaṅgrāma*)

The first two lines in the above extract refer to the colour of पतंग, which fades away when it is washed. Saint Tukārāma, however, definitely uses the word पतंग in the sense of 'kite' in the following lines:—

" तेथें पुण्य पाप नोकरवे स्वरूप उडवी संकल्प पतंग ते ॥ ३ ॥ "

(See *Abhaṅga* No. 197 of the *Mantragītā* of Tukārāma, edited by V. S. Bendre). According to Shri Bendre the *Mantragītā* was composed by Tukārāma sometime before A.D. 1643.

attention to the following reference to चंग i.e., *Kite* in this Hindi work of Kavīndrācārya:—

Folio 7 of B.O.R.I. Ms of *Kavīndrakalpalatā* —While describing the valour of Shah Jahan on the battle-field Kavīndrācārya gives the following simile:—

"उतमंगकटतरिपुरंग घटतसमचंगनटतविनुअंग लटत अरघंग"

We are told in this simile that the severed heads of the enemy fly in the sky like the चंग or Kite.

Francis Buchanan in his *Patna-Gaya Report* (1811-1812 A.D.) published by the Bihar and Orissa Research Society, Patna, Vol. II, page 625, refers to the use and manufacture of *paper kites* by Common artists as follows:—

"Although many great idle fellows amuse themselves with *paper Kites*, the makers cannot live the whole year by this profession as few amuse themselves with this sport except in the cool season. The makers, therefore, retail toys for children which are made by the potters and the apparatus used in smoking tobacco. Their *Kites* (*telanggi* or *guddi*) are not superior to those of Puraniya."

The above extract clearly shows that *Kite-flying* was current in Bihar in A.D. 1812 and possibly long before this year and that the manufacture of Kites had become a regular profession for the manufacturers of toys at Patna and Puraniya in Bihar.

About the currency of Kite-flying in Bengal my friend Prof Chintaharan Chakravarti observes in his letter of 3-6-1952 as follows:—

"As regards Kite-flying in Bengal I may mention that the last day of the Solar month of Bhādra is observed as a *special day for Kite-flying* in Western Bengal, when Kites of many colours and sizes are found flying in the sky from noon to evening." (Compare the celebration of the 9th day of the 9th month of a year as *"Kite's Day"* in China).

About *Kite-flying* in Assam my friend Prof. Maheshwar Neog of the University of Gauhati has kindly informed me as follows:—

16-3-1952—"I am not familiar with any references to Kite-flying in Assamese or Sanskrit. There were many varieties of sports and pastimes patronised by the Ahom monarchs of Assam or otherwise prevalent in the country. Up till the time of loss of Ahom sovereignty in the beginning of the second quarter of the last century the Ahom kings used to seat them

with their nobility on the upper storey of the *raṅg-ghar* (house of sports or merriment) still standing on the site of their capital Rangpur (Śibsāgar) on the occasion of the *mahā-viṣuva- Saṁkrānti* celebrated as *Ca't* (*Caitra*) or *ba'hāg-* (Vaiśākha) *bihu* (visuvant), and witness various sports made by people traditionally assigned for them. One such fun, known as *Śen-melā* (releasing of Hawk) consisted of releasing of a *kanuwā* (crane) and after it a hawk (*Śen*, Sanskrit *Śyena*) and these two birds fighting in the air. Kite-flying seems to have been unknown to the Assamese till very recent times. The same word *cilā* is applied to the bird (masc.; fem.—*cilani*) as well as to paper-kite, which, I think, is an indication of that this game probably came with the English, who have got the same single word for both these things. In many of our small towns the people who sell Kites are often Bengali Muslims from Sylhet or Dacca. The Bengalis call the bird *cil* and the paper-kite *ghuḍi* (घुडि), which may have been derived from Hindi *ghuḍḍi* (घुड्डि) meaning a paper kite."

While thanking Prof. Neog for the remarks quoted above I may observe that there is every possibility of the Muslims introducing the Kites in Assam and other parts of India long before the English advent as we are told by Prof. Goodrich that the use of Kite, which originated in China, spread to Muslim lands in the 7th cent. A.D. We have already pointed out in this paper that Kites were known in the Deccan in the 16th cent., as they are mentioned by St. Ekanāthā (A.D. 1533?-1599) in his Marathi works.

In response to my inquiry about Kite-flying in South India my friend Prof. E. V. Viraraghavacharya of the P. R. College, Kakinada (Dt. E. Godavari) wrote to me as follows on 14-2-1952:—

"*Kite-flying* is a sport indulged in these parts by youngsters (below 20 or 50) in Vizagapatnam Dist. I observed young men (from castes other than the higher castes) participating in it. A friend tells me that this is the season when the Burmese people (young and old) spend much time and money (by way of betting) in this sport. They are said to tie a piece of sharp glass to the Kite and this piece of glass would be allowed to contact the rival Kite in competition, and cut the thread of the rival.

Kite=(*Telugu*) गालि-पडग or गालिपटम्. गालि—wind and पटम्—a piece of cloth (from Sanskrit पट).

पडग =*Phaṇa* or a hood or something resembling it. Kites have long tails (pieces of cloth; the body proper being sometimes in the form of a serpent's hood, made up of thick and coloured papers attached to a square frame of thin bamboo pieces. Sometimes metal rings too are attached to kites to produce a hissing or a buzzing sound."

It is worth while collecting information about *Kite-flying* as current in the different regions of India and the countries of the world.

I believe that the notes about the history of Kite-flying recorded above, though scanty, prove the currency of Kite-flying in India from C. A.D. 1500 onwards. The history of Kite-flying outside India, especially in China and Europe is given by Berthold LAUFER in his book *"The Prehistory of Aviation,"* Chicago, 1928, pp. 31-43 (Kites as precursors of aeroplanes). I shall record in a subsequent paper a complete chronology of Kite-flying as given by LAUFER as also that revealed in the notes recorded in the present paper. I hope scholars interested in this topic will report to me or record independently any references to Kite-flying in India especially prior to A.D. 1500.[3]

3. I record here most cordially my thanks to all friends who have helped me by supplying valuable information bearing on the present inquiry.

'IḌLI' IN KANNADA LITERATURE

By

H. G. Narahari, *Poona*

Having read Dr. P. K. Gode's interesting paper on the popular dishes *Iḍli* and *Dose* in the *Chatterji Jubilee Volume*,[1] I am tempted to record now, for the *Taraporewala Memorial Volume*, some references in Kannada Literature to the former of these dishes which would supplement the data available from Sanskrit and Prākṛt sources.

Iḍḍarige or *Iḍḍalige* appears to be the name by which the dish, now popular as *Iḍli*, was known to the Kannaḍigas of old. A very early work on Cookery, the *Sūpaśāstra* of Jayabandhunandana (c. 800 A.D. according to R. Narasimhacarya[2]) speaks of *Iḍḍarige* of appetising flavour prepared from ground black gram (*urdina bēḷe*), mixed with curd and water and spiced with Asafoetida (*Iṅgu*), Cumin seeds (*jīrage*), Coriander leaves (*Kottumbari*) and black pepper (*meṇasu*):

Aredurdina bēḷeyanoṁ-
dire mosaradi (?) nīroḷiṅgu jīrage kottum-
bari meṇasallaṁ berasi-
ḍḍarigeyanaḍe kampanimpumaṁ taḷedirkum //

The *Pārśvanāthapurāṇa* of Pārśvapaṇḍita (1205 A.D) describes[3] a rich dinner where, along with the many sweet dishes of the Kannada people like *Maṇḍage, Hoḷige, Hūrige* and *Laḍḍuge,* was served *Iḍḍalige,* full of flavour and floating in melted butter:

...tuppadalli tēṅkuva kampu-
ḷḷiddaligegaḷam begaṁ
baḍḍisidar jāṇarembinaṁ bāṇasigar //

1. *Indian Linguistics*, Vol. 16, November 1955, pp. 226 ff.
2. R. Narasimhacarya, *Karṇāṭaka Kavicarite* (Mysore, 1907), I. 16; I understand from Prof. T. N. Sreekantiah of Karnatak University, Dharwar that this work is now identified as part of the *Lokopakāra* of Cāvuṇḍarāya. If this Cāvuṇḍarāya is identical with the author of the *Cāvuṇḍarāyapurāṇa* composed in 978 A.D., the earliest reference to *Iḍli* now available in Kannada literature would go to the last quarter of the 10th century A.D.
3. cited in *KK*., I. 259.

More poetic is the *Śāntīśvarapurāṇa*[4] of Kamalabhava (c. 1235 A.D.), which likens *Iḍḍaliges* served in another splendid dinner to balls of the foam of the celestial river Gaṅgā:

Surasindhuphenapiṇḍo-
tkaramivenal kāntivettu nagaṇada teradim /
Piriduṁ laghutvadiṁ bi-
ttaripiḍḍaligegaḷanantavar baḍḍisidar //

Iḍḍalige is again a prominent dish in an elaborate dinner described by the poet Maṅgarasa III (1508 A.D.) in his *Saṁyaktvakaumudī*:[5]

Begadindeḍemāḍidiḍḍaligedosegaḷa
. . . .
. . .āpoṭṭeyoḍeva maryādeyoḷaguṇḍu tegutirdaru //

Aṇṇāji (c. 1600 A.D.) is another poet who grows poetic while speaking of *Iḍḍalige*. The occasion is provided by his *Saundaravilāsa*[6] where, describing the dishes displayed in a restaurant (*miṭhāyiyaṅgaḍi*), the poet speaks of *Iḍḍaliges* shining like the cool-rayed Moon (*himakaranante rājisuva iḍḍalige*).

The *Uddina Kaḍabu* mentioned in the royal dinner described by the Jain poet Terkaṇāmbi Bommarasa (c. 1485 A.D.) and likened, in poetic fancy, to frost settled down or to globular deposits of boiled nectar or to lunar rays solidified, appears to refer to *Iḍli* only:

Baṭṭavereyo mañjinobbuḷi
baṭṭitādudo amṛtarasavaḷa /
Vaṭṭuvṛttada piṇḍavādudo candrikeyu bandu //
ghaṭṭigoṇḍito enalu noḷpara
diṭṭegolavanu manake haruṣava
puṭṭepuddina kaḍabu savidaru nṛparu mananaliye //

In Karṇāṭak at least the modern *Iḍli* is nothing more than a diminutive form of the ancient giant dish *Huygaḍabu*. Large vessels specially designed for its preparation are to be found even now in all those Karṇāṭaka homes which still keep the old tradition.

4. cited *Ibid.*, p. 294.
5. *KK.*, II. 336.
6. *Ibid.*, p. 130; this is cited by B. A. SALETORE (*Social and Political life in Vijayanagara Empire*, II. 313) also who lists passages in Kannada literature describing the dishes current among the people.

HOW PĀṆINI HAS BEEN MISUNDERSTOOD

By

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Pāṇini's grammar has been studied in India for about 2,500 years, but still there are many rules about the exact meaning and implication of which we are completely in the dark. There are several cases where later grammarians and commentators have thoroughly misunderstood the rules of Pāṇini and sanctioned forms which are manifestly ungrammatical. I shall mention a few such cases in this short paper.

In the *Saṁkṣiptsāra* of Kramadīśvara there is a rule *'nalopo nādhikaraṇaikatve'* ii.5.36. The Vṛtti supplies the example: *rājanyati ṭhakkure.* The commentary explains: *adhikaraṇaikatva-vihita īyi pare nakāra-lopo na bhavati.*

The plain meaning is that *n*- stems do not drop their *n* before the denominative suffix *-īya* when it is added to a locative singular. Thus *ṭhakkuraṁ rājānam ivācarati* yields *rājīyati ṭhakkuraṁ*, but *ṭhakkure rājanīvācarati* will yield *rājanyati ṭhakkure* !

Similarly the *Supadma* of Padmanābhadatta has the rule *nah kye'ṅau* ii.3.2, which is explained thus in the Vṛtti: *aṅi-viṣaye kya-pratyaye nānta eva padasaṁjñaḥ syāt rājīyati, rājāyate; padatvān nalopaḥ; aṅau iti kiṁ ? rājanyati gurau.*

Supadma lays down that an *n*-stem is to be regarded as a pada before the denominative suffixes *-kyac, -kyaṅ* and *-kyaṣ* except when it ends in the locative singular. Thus in the sense of *guruṁ rājānam ivācarati* we shall have *guruṁ rājīyati*, but in the sense of *gurau rājanīvācarati* we shall have *gurau rājanyati* .

All this is very strange, because in all other cases the denominative from the *karmopamāna* and that from the *adhikaraṇopamāna* are absolutely identical and there is no reason why there should be a difference in the case of *n*-stems.

The fact is that Pāṇini prescribes the suffix *-kyac* only after *karmopamāna* in his rule *upamānād ācāre* iii.1.10. Kātyāyana extends the suffix to adhikaraṇopamāna also by his Vārttika *adhikaraṇāc ca.* Now Pāṇini has a rule in his *Aṣṭādhyāyī na ṅisambuddhyoḥ* viii.2.8 acc. to which a pada

does not lose its final *n* before the locative singular and vocative singular endings. The learned grammarian has mentioned *ṅi* in this rule for locative singulars without ending like *vyoman, carman* etc., occurring in the Vedas. Kātyāyana and Patañjali also hold this view, for Kātyāyana has the Vārttika: *bhatvāt tu ṅam pratiṣedhānarthakyam* which is accepted by Patañjali, who explains it thus: *'ṅau pratiṣedho' narthakaḥ'. kiṁ kāraṇam? 'bhatvāt' bhasaṁjñātra bhaviṣyati. yadi tarhi bha-saṁjñātra bhavati 'rathantare sāman ityatra 'allopo' naḥ'* vi. 4.134 *ity allopaḥ prāpnoti naiṣa doṣaḥ; uktam; ubhaya-saṁjñānyapi cchandāṁsi dṛṣyante, tathā hi 'sa suṣṭubhā sa ṛkvatā gaṇena'* (RV. iv. 50.5); *padatvāt kutvam, bhatvāj jaśtvaṁ na bhavati; evam ihāpi padatvād allopo na bhatvān nalopo na bhaviṣyati.*

It is clear from this that according to Patañjali the highest authority on Sanskrit grammar *ṅi* in the rule is for Vedic forms only. He does not mention forms in the classical language in this connection. Thus acc. to Patañjali the rule does not apply to cases covered by the Vārttika: *adhikaraṇāc ca.*

Nāgeśa noticed the point but the conclusion he drew from these premises is different. He says that by not referring to cases like *rājanīvā-carati rājanyati bhikṣuke* the Bhāṣyakāra merely shows that denominative forms are not to be used in such cases. Thus Nāgeśa says in his *Uddyota*: *na ca rājanīvācarati rājanyati bhikṣuke ityatrādhikaraṇāc ca* (iii. 1.10.1) *iti kyaci loka udāharaṇasambhavaḥ etad bhāṣyaprāmāṇyād anabhidhānena tatra kyajanupapatteḥ.* He expresses the same view in his *Laghuśabdenduśekhara* also: *'rājanīvācaratītyarthe' dhikaraṇācceti kyac tu loka nāstyeva anabhidhā-natvād, ata eva parame vyoman* (RV. x.129.7) *ityādāv ayasmayāditvād bhat-vena sūtrasthaṅi-grahaṇa-pratyākhyānam bhāṣyoktaṁ saṅgacchata iti bhāvaḥ.*

No doubt *'anabhidhāna'* comes in very handy whenever a difficulty occurs, but there is no reason why there should be *'anabhidhāna'* here.

Kramadīśvara, Padmanābha and others are right in not accepting the hypothesis of *'anabhidhāna'*, but wrong in the application of the rule.

Thus since Pāṇini's rule *'na ṅi-sambuddhyoḥ'* is meant for the justification of Vedic forms like *vyoman, carman,* etc., since Pāṇini had no idea that Kātyāyana would extend his suffix *-kyac* to *adhikaraṇopamāna* also and was thus not in a position to make provision for the non-application of the rule in the case of *adhikaraṇopamāna* ending in *n,* since Kātyāyana and Patañjali who accept *-kyac* in the case of *adhikaraṇopamāna* do not refer to the case of *n*-stems while considering *'na- ṅi-sambuddhyoḥ'* but confine it to Vedic forms like *vyoman,* and since there is no reason why in the case of *n*-stems alone the *adhikaraṇopamāna* denominatives should differ from the

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karmopamāna ones, it is perfectly clear that *rājanīvācarati* will yield *rājñyati* and not *rājanyati* and that the protagonists of *rājanyati* have misunderstood Pāṇini's rule.

Pāṇini lays down that in the case of Bahuvrīhis in which the first member is an adjective to the second, the former if ending in a feminine suffix generally drops it except when the last member happens to be *priyā*, etc. Now Pāṇini includes the word *'bhakti'* in the *priyādigaṇa*. But in literature in compounds with *'bhakti'* (devotion) as the final member, the preceding member invariably shows the elision of the feminine suffix. So, many later grammarians and commentators were forced to make the absurd statement that *dṛḍhabhaktiḥ* found in the *Rāmāyaṇa* and *Raghuvaṁśa* is to be dissolved as *dṛḍhaṁ bhaktiḥ yasya saḥ* and that *dṛḍhā bhaktir yasya saḥ* should yield *dṛḍhābhaktiḥ*. Bhojarāja laid down that there should be *puṁvadbhāva* when *'bhakti'* means 'an object of devotion' but no *puṁvad-bhāva* when it means 'devotion'; but later grammarians did not see their way to accepting this view. They did not consider for a moment the sense in which Pāṇini uses the word *'bhakti'* in his grammar; they did not take into account the instances occurring in the *Mahābhāṣya*, they did not think it their business to seek for the reason underlying the phenomenon of *puṁvadbhāva*, they took the word *'bhakti'* in the sense prevalent in their times and asserted and maintained against the genius of the language that the grammatically correct form is *dṛḍhābhaktiḥ*.

According to Pāṇini ii.3.40 both the genitive and the locative are used in *'nirdhāraṇa'*; but he bans compounds with the partitive genitive but not with the partitive locative in his rule *'na nirdhāraṇe'* ii. 2.10. This has led later commentators to think that Pāṇini allows compounds with the partitive locative. They forget that Pāṇini does not sanction compounds with *nirdhā-raṇa spatamī* and so it is not necessary for him to prohibit the formation of such compounds.

Instances could be multiplied to any extent but these three will suffice to show how Pāṇini's rules have been misunderstood through the ages. Later commentators thought the ancient commentaries worthless because they could not bring themselves to accept their view and so these invaluable works perished. What would we not give to have a glimpse of the first commentary of the *Aṣṭādhyāyī*?

SANSKRIT *DHARUṆA-* AND GREEK *THELUMNA*

By

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Vedic *dharúṇa-* "bearing, holding; (n.) basis, foundation, etc." (ṚV, AV, VS) and Greek *thélumna* n. plur. "foundations" (Empedocles), Homeric *pro-thélumnos* "uprooted, whose roots, whose foundations are gone,"[1] *tetra-thélumnos* "of four layers" have been connected by some older etymologists,[2] and in more recent times by Franz SPECHT, *Der Ursprung der indogermanischen Deklination* (1944) pg. 126, 275 n. 1. At first sight, however, this comparison seems to be impossible, since one cannot reasonably keep apart *dharúṇa-* from *dhar-* "to hold", Vedic *dhárana-* "bearing, holding, supporting", etc., going back to I.E. **dher-* (WALDE-POKORNY, I, 856sqq.); Greek **ther-*, not *thel-* should therefore be expected. On the other hand, the combination of *dharúṇa-* and *thélumna* etc. is very tempting,[3] not only because of the identical meanings ("foundation, firm ground"), but also from the point of view of word-formation: speaking in Sanskrit symbols, a **dháru-man-* (: *thélu-mn-a*, cf. CHANTRAINE, *La formation des noms en Grec ancien*, 1933, pg. 215sq.), from the *-u-* base in *dharú-ṇa-* and plausibly in *dhru-vá* "firm, fixed", would be quite conceivable besides Vedic *dhár-man-* "support, hold" (from the un-extended root) and *dhárī-man-* "custom, law, dharmaḥ" (from the *shva*-base). And there is perhaps a way of connecting Greek *thélu-mn°* with Skr. *dharú-ṇa-* w i t h o u t having to separate *dharúṇa-* from *dhar-*, or *dhar-* from its cognates pointing to I.E. **dher-*.

Looking at the Greek word-family of *thélumna*, we see that the oldest examples are the two Homeric compounds, *pro-* and *tetra-thélumnos*. The simplex *thélumna* is later; finally, there are some glosses in HESYCH's lexicon

1. See J. WACKERNAGEL, *Sprachliche Untersuchungen zu Homer* (1916) pg. 240; also DILLER, *Philologus* 97 (1948) pg. 361sq.

2. Cf. BOISACQ, *Dictionnaire étymologique de la langue Grecque*, 2nd. ed., pg. 337 n. 1.

3. and would be preferable also to the explanations of *thélumna* as "pre-greek": cf., f.i., H. GÜNTERT, *Labyrinth* (1932) pg. 30; A. J. VAN WINDEKENS, *Le Pélasgique* (1952) pg. 88 (with bibliogr.).

considered to be members of the *thélumna*-family, which are of no etymological value.[4] That means, that in oldest Greek *-thélumno-* is recorded only with two prefixes containing *-r-*, *pro-* and *tetra-* : would it, therefore, be too bold to assume an older **therumno-* (: *dharúṇa-*, I.E. **dher-u-mn-*) changed by dissimilation in **pr̥o-ther̥umno-*, **tetr̥a-ther̥umno-* to *-thélumno*, a form later used also as a simplex (*thélumna*, Empedocles)? This supposition would enable us to include Greek *thélumna* in the family of Skt. *dhar-* —leaving undecided the old theory of Skt. *dharúṇa-* coming from **dharumna-* and being thus still closer related to the Greek words examined in this little paper.

4. "*athélimnon*" is now read "*athélēmon ákousma: kakón*" in LATTE's new edition (1953) and does not belong to our words; "*athélimnoi: kakoí*" is a "spätbyzantinische Entstellung des Cyrillglossars" (Prof. LATTE, in a letter to the present writer) and a case of itacism; "*thelemon: hólon ek rhizōn*" is plausibly a wrong derivation from Homeric *prothélumnos*—and certainly no I.E. "thème en -e-" (VAN WINDEKENS, l.c.)!

FREQUENCY AND PHONEMICS

By

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0.1. It is customary in morphological analysis to make use of the criteria of maximum differentiation and replaceability. Thus on the basis of maximum differentiation, since the verb *sing* and many others in English have a maximum of five forms, *sing, sings, sang, sung, singing*, the verb *put* is also analyzed as having the same five forms. The verb *put* has only three phonemically distinct forms, *put, puts* and *putting*, but these are equated with the five forms of *sing* on the basis of their mutual replaceability, such that *put* is a single morpheme form when it replaces *sing*, is composed of a base morpheme plus a past tense morpheme when it replaces *sang* and is composed of a base morpheme plus a past participle morpheme when it replaces *sung*. It is also customary to temper these criteria by the principle of frequency. If the criterion of replaceability is taken rigorously, then it would be necessary to analyze *sang* as two different forms depending upon whether it was replaceable by *was* or by *were*. If the analysis is tempered by the principle of frequency, then since there is in English only one verb that has more than five phonemically distinct forms, the verb *to be* (*be, am, are, is, was, were, been* and *being*), English can be analyzed as having verbs that show only five forms with the exception of the verb *to be* which has eight forms. To analyze all English verbs as having eight forms would be to follow the criteria of maximum differentiation and replaceability more rigorously, but would be less practical.

0.2. In Russian the noun /stól/ 'table' has five phonemically distinct forms, /stól, stalá, stalú, stal'é, stalóm/, in the singular as does also the noun /žiná/ 'woman', /žiná, žinú, žiní, žin'é, žinóy/. However, since both žiná/ and /žinú/ are replaceable by /stól/ and since both /stalú/ and /stal'é/ are replaceable by /žin'é/, it is necessary to consider that /stól/ represents two forms and that /žin'é/ represents two forms or that we have a total of six case forms. The form /stól/ is a nominative case form when it replaces /žiná/ and an accusative case form when it replaces /žinú/, the form /žin'é/ is a dative case form when it replaces /stalú/ and a locative case form when it replaces /stal'é/, the mutually replaceable forms, /stalá/ and /žiní/, are genitive case forms and the mutually replaceable forms, /stalóm/ and /žinóy/, are instrumental case forms, a total of six case forms. Most of the nouns in the language can be described in terms of this six-case system, but not all nouns. The form /stal'é/ is sometimes replaceable by the form

/uglú/, /f stal'é/ 'in the table' /v uglú/ 'in the corner', and sometimes replaceable by /ugl'é/, /a stal'é/ 'about the table' /ab ugl'é/ 'about the corner'. Also the form /stalá/ is sometimes replaceable by /damú/, /is stalá/ 'out of the table' /íz damu/ 'out of the house', and sometimes replaceable by /dóma/, /at stalá da dv'ér'i/ 'from the table to the door' /ad dóma da vagzála/ 'from the house to the station'. The criterion of replaceability, if taken rigorously, would require the addition of two[1] more case forms to the system; /stal'é/ would be one case form when it replaces /uglú/ and a different case form when it replaces /ugl'é/ and /stalá/ would likewise represent two different case forms. There are only a small number of nouns in the language that have these extra case forms phonemically distinct from the six originally posited. If the criterion of frequency is introduced, the bulk of the language may be described in terms of six case forms and then a limited, but specifiable, number of nouns would be exceptional in having more than six forms.

0.3. When a linguist makes an analysis of this type, he is positing two levels of morphological patterning in the language. I would call one level the basic or high frequency paradigmatic patterning and the other the exceptional or low frequency paradigmatic patterning. Both are integral parts of the language and must be stated in the morphology. There is no sharp line of demarcation as to when the principle of frequency is to be employed in the analysis and when not. In the English example cited above, there is only one verb with eight forms and a fairly large number with no more than five. In the Russian example there are a number of nouns with the extra case forms, but the difference between the number of nouns with six forms and those with more than six is still very great. It is a matter of the discretion of the linguist how great a difference in frequency between two morphological patterns he will insist on before positing two levels of morphological patterning. If he is discreet, his analysis will be acceptable to other linguists. The application or non-application of the principle of frequency in a specific language may be conditioned also by the purpose of his analysis.

1.0. In phonological analysis this principle of frequency is not generally employed in assigning allophones to phonemes. In some languages where a particular phonemic contrast is one of very low frequency it is worth while considering some of the implications of adopting this principle. A phonemic contrast may be rare either because it occurs in only a few items, that is,

1. Rigorous application of the principle of replaceability would require positing more than eight case forms in Russian, but this example is meant to be illustrative, not exhaustive.

has a low list frequency, or because it has a very limited distribution. It is worth considering both cases.

1.1. An extreme example of a phonemic contrast with a very low list frequency occurs in Mazateco,[2] where [t] occurs in only a few words medially after nasals, but with high frequency in initial position and [d] occurs with high frequency medially after nasals and not at all initially. One analysis, giving precedence to the principle of phonetic similarity, would be to consider [t] either initial or after nasals as the phoneme /t/ and [d] as the phoneme /d/. This produces an analysis with a very peculiar distribution of the phonemes, /t/ occurring initially with high frequency but after nasals in only a few words and /d/ occurring with high frequency after nasals but not at all initially. Giving precedence to the principle of frequency, another analysis would be to consider [t] initial and [d] medial after nasals as allophones of the same phoneme /t/ and to consider [t] medial after nasals, as a different phoneme /t̲/. This analysis has various advantages. It considers [t] and [d] as allophones of the same phoneme which fits the fact that [t] and [d] are in non-contrastive distribution for the vast majority of the language. It considers medial [t] after nasals as a separate phoneme in that position in which it does contrast with [d] which depicts more clearly the fact that [t] and [d] contrast in only a few items. It gives the phoneme /t/ a wide distribution and one probably paralleled by other phonemes. It considers the consonant system of the language to be composed of the phoneme /t/ and /t̲/ among others, and further to be composed of two sub-systems.[3] The first sub-system is of high frequency and includes the phoneme /t/, the second of low frequency and includes the phoneme /t̲/. This analysis does not eliminate the contrast between [t] and [d] from Mazateco, which seems to be the intent of Fries and Pike when they relegate the contrast to a 'conflicting coexistent system'.[4] This analysis also avoids the necessity for introducing the native speaker's reaction to learning to write his own language or learning a different language.[5] It admits overlapping of phonemes, a point discussed in section 2.

2. The problem discussed here is taken from the article of Charles C. Fries and Kenneth L. Pike, Coexistent Phonemic Systems, *Lang.* 25.29-50 (1949).

3. The sub-systems posited here on the basis of frequency are similar to sub-systems posited on the basis of distribution. Punjabi, according to the unpublished analysis of Sri K. C. Bahl when he was studying under my direction at the Deccan College, has a vowel system composed of ten phonemes, /i ɪ e ɛ ʌ a ɔ o ʊ u/, which may be divided on the basis of distribution into one sub-system including /ɪ ʌ ʊ/ and a second including /i e ɛ a ɔ o u/. Armenian, either the East or West variety, has a vowel system of six phonemes, /i e a o u ə/, of which /i e a o u/ form one distributional sub-system and /ə/ a second.

4. Fries and Pike, *Lang.* 25.32 (1949).

5. Fries and Pike, *Lang.* 25.30 (1949).

1.2. An example of a contrast in a limited position occurs in Pre-Slavic at a time not much earlier than Proto-Slavic. After the non-palatalized phonemes /p b m v t d s z l n r k g x/ and after the palatalized phonemes /č š ž y/ the vowel [a], but not [æ], may occur, after the palatalized phonemes /p′ b′ m′ v′ t′ d′ s′ z′ l′ n′ r′/ the vowel [æ], but not [a], may occur and after the phonemes /c ʒ ś/ both [a] and [æ] may occur. One analysis, giving precedence to phonetic similarity, would be to analyze [æ] wherever it occurs as the phoneme /æ/ and [a] wherever it occurs as the phoneme /a/. This would mean that the phoneme /æ/ could occur only after 14 of the 32 consonant phonemes and the phoneme /a/ could occur after only 21 of the 32 consonant phonemes and of these 21 only three are duplicated among the 14 after which /æ/ may occur. This is a distribution unlike that of the other vowel phonemes which may for the most part[6] occur after any consonant. Considering the limited position of the contrast between [a] and [æ] and considering that [a] and [æ] are almost in complementary distribution in the same way that other front and back vowels are completely in complementary distribution, another analysis would be to consider [æ], where it contrasts with [a], a phoneme /æ/ and to consider [a] and [æ] in all other positions as allophones of the phoneme /a/. This analysis states the contrasts that occur in the language since it recognizes the two phonemes /a/ and /æ/ in the only position in which they contrast with each other. It also states the patterning of allophonic distribution in a consistent manner since it recognizes that the patterning of [a] and [æ] in all positions except after /c ʒ ś/ is parallel to the patterning of the other front and back vowels. The vowel system is composed of six phonemes /i u ə o a æ/, which in turn is composed of two sub-systems, one including the phonemes /i u ə o a/ each of which may occur after any consonant and the other including /æ/ which may occur only after /c ʒ ś/.

1.3. The situation where a contrast occurs with a very limited distribution can be considered the converse of the situation where a contrast is lacking in limited positions. In German the contrast between a voiced and a voiceless stop occurs in many positions, but is lacking in final position. The usual method of analyzing this situation among American linguists is to assign the phone in final position to one of the pair of voiced-voiceless stop phonemes. The lack of contrast is indicated by admitting only one type of phoneme in this position. This may be said to parallel the Pre-Slavic situation above where the contrast between [a] and [æ] in a limited position is recognized by admitting these as two phonemes in the only posi-

6. The vowel /u/ has a defective distribution, but the other vowels, /i ə o/, may occur after any consonant.

tion in which they do contrast. Some European linguists are likely to draw attention to the lack of contrast in German by admitting an archiphoneme in this position. This might be paralleled in the Pre-Slavic example by positing an archiphoneme /A/ for both [a] and [æ] in positions in which they do not contrast.

1.4. The stop-affricate system of Tamil presents a more complicated example of phonemics contrasts with low list frequency. The phones pertinent to the analysis[7] may be illustrated by the following chart:

	Initial	Intervocalic	Medial after /r/[8] or /l/[9]	Medial after nasal[10]
Labial	p‘	pp‘	p‘	b
	(b)[11]	β	β	
			(b)	
Dental	t‘	tt‘	t‘	d
		ð	ð	

7. The data discussed here are from the speech of Sri M. S. Shanmugam Pillai, Lecturer in Tamil, Annamalai University, Annamalainagar, who has been working on an analysis of his language with some assistance from me. The language is the variety he would ordinarily use in conversation, but not the more formal classroom style. He comes from Nagercoil in the extreme south, but has been living in Chidambaram for the last twelve years. The data differ phonetically to some extent from that of Murray Fowler in his article, The segmental phonemes of Sanskritized Tamil, *Lang.* 30.360-7 (1954). Differences occur in both the native vocabulary and in the loanwords. My data include loans from Sanskrit, Portuguese and English, whereas Fowler's includes loans only from Sanskrit and Portuguese. The differences are to be attributed partially to a difference in dialect or idiolect and partially to a difference in style, the style that Fowler is analyzing being somewhat more formal.

8. Although two varieties of [r], a dental slightly trilled [r] and an alveoler more strongly trilled [r̠] are written in this position, there is no difference in the pronunciation. Thus, what is written *ti:rppu* is pronounced [t‘iyr̠p‘ɪ] and what is written *kar̠pu* is pronounced [k‘ʌr̠p‘ɪ]. External evidence of this fact is that students sometimes mis-spell the second of these forms in the manner of the first.

9. Clusters of retroflex /ḷ/ plus stop or affricate also occur, but there are fewer combinations and those that do occur neither contribute to, nor conflict with, the analysis presented.

10. There are limitations as to which nasals may occur before a particular stop. These limitations raise problems in the assignment of nasal phones to nasal phonemes, but do not affect the analysis of stops and affricates.

11. Phones in parentheses are those with a very low frequency. Examples are: [b] : [bʌlʌm] 'strength', [ʌr̠buðʌm] 'wonderful', [bʌlbɪ] 'bulb' [t̠‘] : [t̠‘ɪy] 'tea'; [ṭ‘] : [ṭ‘ʌγʌr ʌm] 'the letter ṭ'; [ḍ] : [ḍʌpp‘a] 'tin vessel', [k‘a:r̠ḍɪ] 'post card', [k‘a:lḍɪwɛl]' Caldwell'; [s] : [sʌri] 'that's correct', [p‘a:r̠sɪl] 'parcel', [p‘ɛnsɪl] 'pencil'; [j] : [ǰʌmbʌr] 'jumper, blouse', [ǰʌnnʌl] 'window'; [g] : [ga:ndi] 'Gandhi'.

	Initial	Intervocalic	Medial after /r/[8] or /l/[9]	Medial after nasal[10]
Alveolar	(ṯ‘)	ṯṯ‘		ḏr[12]
Retroflex	(ṭ‘)	ṭṭ‘	ṭ‘	ḍ
	(ḍ)[13]	ḍ	ḍ	
Palatal	č[14]	čč	č	ǰ
	(s)[15]	s	(s)	(s)
	(ǰ)			
Velar	k‘	kk‘	k‘	g
	(g)	γ[16]	γ	

It is clear that this represents a six-way contrast with respect to position of articulation as shown by the contrasts of geminates in intervocalic position: [k‘^pp‘^m] ‘tribute’, [k‘^tt‘ɪ] ‘cry’,[16a] [k‘^ṯṯ‘ɪ] ‘studying’, [k‘^ṭṭ‘ɪ] ‘tie’, [k‘^čči] ‘party, sect’, [p‘^tt‘ɪ] ‘ten’, [p‘^ṯṯ‘ɪ] ‘attach to’. [p‘^ṭṭ‘ɪ] ‘silk’, [p‘^kk‘^m] ‘side’. It is also clear that there is, at least for some phonemes, a contrast between a tense, voiceless aspirated phoneme and a lax, voiced phoneme: [p‘^l^m] ‘a measure of weight’, [b‘^l^m] ‘strength’.

12. The phone [ḏr] represents an alveolar stop with a very short r-colored release. This could be analyzed as /dr/ but may be analyzed as the variety of alveolar stop that occurs after a nasal. Fowler, *Lang.* 30-362 (1954) analyzes it as /dr̲/, an analysis that is supported by the similar cluster he finds in [nej-ṯŕɪ] ‘yesterday’ /ne:ṭru/. He thus finds no evidence of an alveolar contrasting with a dental or with a retroflex. In my data, where Fowler has the cluster [ṯŕ], I find [ṯṯ‘], which clearly contrasts with [tt‘] and with [ṭṭ‘]. I also have in my data an alveolar in initial position contrasting with a dental: [t‘iy] ‘fire’, [ṯ‘iy] ‘tea’. Since I find it necessary to posit an alveolar initially and intervocalically, I would consider the cluster [ḏr] as the variety of alveolar that occurs after a nasal.

13. The symbol [ḍ] is used here to represent a voiced retroflex stop in initial position and medially after a nasal and a voiced flap intervocalically and medially after /r/ and /l/. This distinction is not necessary for the analysis.

14. I have used the symbols [čǰ] to representt [tʃ dʒ] and the symbol [čč] to represent [ttʃ] mainly to show more clearly the parallelism between the palatal and the other series.

15. In some items intial [s] is in free variation with initial [č]: [sɪŋgy∆m] or [čɪŋgy∆m] ‘lion’, [s: astri] or [ča: stri] ‘Castri’, but in some it does not alternate: [s∧ri] ‘that's correct’. The phone [ǰ] in the items cited in footnote 11 do not show any alternation, although in Fowler's data, *Lang.* 30.365 (1954), [ǰ∧nn∧l] ‘window’ does show alternation.

16. The phone [γ] shows free variation in intervocalic position with a voiceless velar spirant [x]: [p‘a:γ∧m] or [p‘a:x∧m] ‘portion’.

16a. Small cap ‘ɪ’ has been substituted for author's crossed small cap ɪ.

The problem is the assignment of allophones to phonemes. One analysis,[17] giving precedence to phonetic similarity, would be to assign the tense, voiceless phones to the same phoneme and the lax voiced phones to the same phoneme. Thus [g] and [γ] would be allophones of the phoneme /g/ and [d] and [ð] would be allophones of /d/. However, in the case of the labials, since there is a three-way contrast of [p], [β] and [b] in position after /r/ and /l/, [b] and [β] could not be allophones of the same phoneme and the distribution of allophones for the labials would not be similar to that for the velars and dentals. The phonemes /d/ and /g/ would have stop allophones in initial position and after a nasal, as would also the labial phoneme /b/. Intervocalically and after /r/ and /l/ the phonemes /d/ and /g/ would have spirantal allophones, whereas the phoneme /b/ would not occur intervocalically and would have a stop allophone after /r/ and /l/. The distribution of phonemes would be very irregular, thus /b/ would occur in three of the positions under discussion, /d/ in a different three positions, /ḍ s g/ in all four positions, /p t č k/ all in the same three positions (but not the same three in which either /b/ or /d/ occur), /β/ in two positions and /j/ in the other two positions, neglecting the distribution of the alveolars which would be irregular by any type of analysis. Taking frequency into consideration I would first consider only those phones that occur with high frequency. Doing this I find no contrasts in initial position, a two-way contrast in intervocalic position that may clearly be analyzed as a single phoneme contrasting with the same phoneme geminated. After /r/ and /l/ there is also a two-way contrast that may be similarly analyzed even though the voiceless stop or affricate is not long. Thus initial [pʻ tʻ č kʻ] would be /p t č k/, intervocalic [ppʻ ttʻ ṯṯʻ ṭṭʻ čč kkʻ] would be /pp tt ṯṯ ṭṭ čč kk/, intervocalic [β ð ḍ s γ] would be /p t ṭ č k/, the [pʻ tʻ ṭʻ č kʻ] after /r/ and /l/ would be /pp tt ṭṭ čč kk/, the [β ð γ] after /r/ and /l/ would be /p t k/ and the [b d ḏr ḍ ǰ g] after nasals would be /p t ṯ ṭ č k/. The phones that occur with low frequency and contrast with those already established as phonemes would be separate phonemes, thus [b] in initial position and after /r/ and /l/ would be the phoneme /b/, [s] in initial position and after nasal would be /s/ and [ḍ ǰ g] in initial position would be /ḍ ǰ g/. The [ṯʻ] and [ṭʻ] that occur initially fit the distribution pattern of the other voiceless phonemes and would be /ṯ ṭ/. The phones

17. This is the type of analysis employed by FOWLER in *Lang.* 30.360-7 (1954). He does not present in his article the type of distributional data that I have used in my analysis, but as far as I can tell from the data he presents, if the analysis presented here were applied to his data, it would yield similar results. If this is true, then this type of analysis based on frequency would have the further advantage that it would more readily fit a variety of Tamil idiolects or dialects.

[ḍ s] in medial position after /r/ and /l/ fit the distribution pattern for which single voiceless phonemes are posited and would be phonemically /ṭ č/.

To judge this analysis it is necessary to consider how well it describes the language. It states all the contrasts that occur in the language, treating those of high frequency as belonging to a series of voiceless and tense phonemes /p t ṯ ṭ č k/ and those phones of low frequency as belonging to a different series of phoneme /b ḍ s ǰ g/. The distribution of all the high frequency phonemes follows the same pattern with the exception of the alveolar phonemes which would be irregular by any analysis. With this exception they all occur initially, intervocalically and medially after /r/, /l/ and nasals and they all occur geminated intervocalically and after /r/ and /l/. They all parallel fairly closely the distribution of the nasals and liquids. There are three nasals /m n ṇ/ and three liquids /r l ḷ/[18] to be considered here. Each of these except the retroflex may occur initially paralleling the distribution of /p t ṯ č k/, the non-occurrence of the retroflex /ṇ ḷ/ paralleling the rare occurrence of initial /ṭ/. All the nasals and liquids may occur intervocalically either singly or geminated, again parallel to the distribution of /p t ṯ ṭ č k/. Even the low frequency phonemes follow a pattern of distribution similar to each other since they all occur almost exclusively in initial position, the exceptions being that /b/ occurs medially after /r/ and /l/ and that /s/ occurs after nasals. The distribution of the allophones of the phonemes /p t ṯ ṭ č k/ also follows a consistent pattern: a voiceless, aspirated, tense stop initially and when geminated, a voiced, lax stop medially after a nasal and either a spirant or a flap medially after /r/ and /l/ and intervocalically. This analysis describes the language as having a stop-affricate system composed of the phonemes /p t ṯ ṭ č k b ḍ s ǰ g/. This system may be split into two sub-systems, one consisting of the phonemes /p t ṯ ṭ č k/ each of which occurs with high frequency and has a distribution similar to that of the others and a second sub-system consisting of the phonemes /b ḍ s ǰ g/ each of which occurs with extremely low frequency, but nevertheless has a distribution pattern similar to that of the others.

Another advantage of this analysis is that it shows the past history of the language. The high frequency phonemes reflect the state of the language at an earlier period, that is, a language with a single stop-

18. There is in Tamil another retroflex continuant, usually symbolized as [l̤], showing in some positions r-coloring and in other positions l-coloring. Its distribution is quite different from that of /m n r l/ in that it does not occur initially and different from that of /m n ṇ r l ḷ/ in that it does not occur geminated intervocalically.

affricate system. The low frequency phonemes show new contrasts that have been introduced into this single stop system by borrowing from Sanskrit, Portuguese and English. It seems reasonable to expect that in the future history of Tamil, one of two things is likely to happen. First, the low frequency items may be assimilated to the one-stop sub-system producing a one-stop system. Considering the extremely low frequency of these items, this may very well happen. Second, the low frequency phonemes may gain in frequency, either by further borrowings or by developments of the native vocabulary, to such an extent that it is no longer valid to set up a distinction between the different frequencies and the language would have to be analyzed as a two-stop system that is not split into sub-systems based on a difference in frequency. In summary, this analysis reflects the one-stop system of an earlier period of the language, describes the present-day language as having a two-stop system, but one that is barely phonemic, and leaves the question open as to whether the low frequency phonemes have introduced a phonemic split that will eventually produce a two-stop system with a regular distribution of the phonemes in it or whether the low frequency phonemes represent temporarily unassimilated forms that will eventually be assimilated and produce again a one-stop system.

2. The preceding analysis is based on the assumption that a phonemic analysis of a language is a statement of the phonetic contrasts that occur in that language in terms of discrete units, called phonemes. Phones that do not contrast with each other are assigned to allophones of the same phoneme. The phonemes are determined by the contrasts. The assignment of non-contrasting phones to phonemes is determined by supplementary criteria, such as phonetic similarity, pattern and distribution, and I would add to these, frequency. I would suggest that frequency may be given precedence over phonetic similarity in a language like Mazateco or Tamil, although which should be given precedence in a specific case will be dictated by the facts of the particular language being analyzed. Giving precedence to frequency allows overlapping of phonemes. This can be justified from a theoretical point of view since no phone in one position is ever identical with any phone in a different position and thus overlapping of phonemes is theoretically impossible. From a more practical point of view, even if a linguist considers two phones as identical, there is no reason why any one of the supplementary criteria should be given precedence a priori over any one of the others. The linguist is required to take care of all the contrasts that occur in a language, but as supplementary criteria he may give precedence to distribution rather than to phonetic similarity or, as I have suggested in the examples above, he may give precedence to frequency. The Tamil stop-affricate system is one case in particular where there are advantages in giving precedence to frequency.

LOAN WORDS IN PERSIAN

By

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Since the dawn of human civilisation the greatest treasure of mankind has been the power of expression in forms of words and languages which are even now advancing on the path of evolution to an unknown destination or fulfilment. No language is entirely free from borrowed words, because no nation has ever been completely isolated. Contacts with other nations inevitably lead to borrowings, though their number may vary considerably. Loan words always show a superiority of the nation from whose language they are borrowed, though this superiority may be of different kinds.

The Persian people had for their neighbours both in the east and the west some of the most highly civilised races of Asia. On the east were the Indians who were in the Aryan-speaking North India their linguistic kinsmen in the historical period and on the west were the Elamites, the Babylonians and the Assyrians foremost among the nations of antiquity. They came also in contact with a great many other nations both as neighbours and as conquerors; with the extension of the Achaemenian empire, the Persians could count among their subjects Arabs, Babylonians, Assyrians, Syrians, Egyptians and the civilised peoples of Asia Minor including the Greeks settled in Western Asia Minor and in the coast lands. Words from most of the languages could be expected to come to the Ancient Persian language in the course of the intercourse of the Persians with their speakers. Such words, of course, became naturalised in the language and were passed on to Pahlavi or Middle Persian and Modern Persian. One such typical word is the modern Persian word '*muhar*' = seal. In ancient times the Persians knew only the cylinder seal as used by the Babylonians: a long round cylinder-shaped piece of stone was engraved on all sides with figures and words and this would be rolled on a piece of clay to give the impression. The flat seal such as we know was in use among the Egyptians, and the Persians learned to use it evidently from this people, so that the Egyptian seal came to be known as '*mudra*', i.e., the Egyptian article; the Syrian name for Egypt *Mizraim* or *Mizra* was Persianised into '*mudra*'. This word '*mudra*' was borrowed by the ancient Indians from the Persians and was adopted in Sanskrit as '*mudra*' = seal, ring, etc. Old Persian *mudrā* > *muδr* and then

muhar (Elamite *mu-iṣ-ṣa-ri-ya, mu-sir-ra-ya,* Babylonian *mi-ṣir,* Hebrew *miẓr*). Muhar or muhr is thus an example of an old foreign word in modern Persian—a name of a people or country, adopted from the Syrians, and employed to mean an article. The word '*man*' = a weight is in all likelihood an old Persian borrowing from the Babylonian '*mana*' which also found its way to Greek, as *mnā* and to Sanskrit as '*mana*' or '*manā*'. The ancient Persians were profoundly influenced by the Babylonians in their culture and it is quite reasonable to expect that they had borrowed words from the Babylonian language which is Semitic in origin and a distant kin to Arabic.

The Persians during the period of Achaemenian empire were a ruling race and they did not have much need as a proud people to borrow words from their subjects unless absolutely indispensible, e.g., names of peoples like '*yaunā*' and foreign proper names like '*dubāla*', '*haldita-*,' '*labnāna*', etc. The cuneiform letters as used for their inscriptions are based on the characters used by the Assyrians and Babylonians in writing their language. They are written from left to the right and are believed by some to be used only for inscriptions. This alphabet fell into disuse after the end of the Achaemenian dynasty. It seems that some kind of modified Syrian alphabet based on the Phoenician script (which is the ultimate source equally of the Greek and Roman alphabets as well as the Arabic) was in common use throughout the Achaemenian empire in writing all sorts of languages, Aryan and non-Aryan; and the Avesta might have originally been written in it. Later on the Syrian alphabet as used in the Persian empire were evolved the elaborated Avestan alphabet and the rather crabbed Pahlavi script. These are still in use in writing Avesta and Pahlavi among Parsis of the Gabris, but in Persia itself, after the Arab conquest, when Pahlavi, a middle Persian was changing to modern Persian, the Pahlavi script was abandoned for the Arabic supplemented by the letters *pé, ché, žhe, gāf* to represent Persian sounds.

After Alexander's death (323 B.C.), the history of Persia was for a period linked with that of the west. The Greek rulers of Syria (descended from Antiochus, a general of Alexander), for a time ruled over Persia, and during this period there was an intensive Greek and Syrian influence on Persian culture and language. In 256 B.C., a national dynasty arose in Persia where a Parthian chief named Arsakes made himself independent in a part of Persia (Parthia in North-East Persia). The Parthians are a distinct branch of the Iranians—neither Median or Persian; at first they encouraged Greek culture, Greek being as their official language—so tremendous was the influence of Alexander and his Greek followers; but later, in the 2nd century B.C., they took up the language of the century. The Parthians fought and drove out the Greeks, and they had to fight with the Turanian hordes

from Central Asia. The Parthian dynasty, although Iranian, was finally overthrown by another native dynasty, the Sassanians in 226 A.D., when Artaχšir Pāpak who was said to be a scion of the Achaemenian house, became ruler of Persia, and with his accession a period of national glory was found in Persia, with important effects on the language which continued to the Arab conquest in 641 A.D.

The Persian language had during the Greek and Parthian periods undergone a great change. This change was a slow one, no doubt, but the character of Old and Ancient Persian altered and it became Middle Persian or Pahlavi. A large Semitic element came in the Huzvarish form.

The Syrian language in the centuries before and after Christ had immense vogue in the Near East and it had penetrated with the Syrian alphabet into distant Central Asia and China — the alphabet being adopted later on by Turks, Mongols and Manchus. Commercial enterprise of Syrian speaking peoples, coupled with their zeal for Christianity, the religion adopted in Syria in the early centuries of the Christian era was responsible for this. Persia also came under Syrian influence and a good number of Syrian words were adopted into Persian during the transition of Old Persian to Middle Persian and during the Modern Persian stage. The Arabs also had come under the influence of the Syrians and they too borrowed a great many Syrian or Aramaic words and later on when in Post Muhammedan times the Arabic language began to influence Persian — these Syrian words already existing in Persian received a sort of re-enforcement from their equivalents adopted by Arabic. Thus Syrian 'sikka' (sykt') = die for coining etc. was adopted into Persian even before Muslim times and this word was passed on to India also as early as the beginning of the 7th century. Arabic borrowed the word from Syrian in the form *'sikkatun'* and the word came to Persian once again through the Arabic as *'sikka'* and strengthened the existing form *'sikka'* only the new meaning from Arabic persisted.

In addition to the Greek and Syrian, there were also words from Indian languages — the ancient Indian vernaculars, and in recent times, the modern vernaculars. Contact between the sister speeches of Indo-Aryan and Iranian was always a close one, from the separation of the two branches from each other in pre-vedic times onwards. Borrowing from Greek and Syrian took place before the development of Modern Persian in Old Persian and Middle Persian largely in Modern Persian. Greek lost its influence in the east during the Sassanian period, and Syrian was gradually absorbed by Arabic, and with the growth of Islamic culture in Iraq, Syria and Egypt western influences came into Persian only through Arabic. That is why in Modern Persian, there were hardly any borrowings direct from Greek and Syrian.

The Persians continued to be in direct touch with their eastern and north-eastern neighbours — the Indians and the Turks notably. Here there was no Arabic to act as an intermediary. Consequently as in ancient times, so in mediaeval and modern times Indian words have come to Persian, though in a very restricted number and the Turkish words also came to Persian, in the post Muhammedan days only, large bodies of Turkish speakers were always to be found in Persia and frequently they formed the ruling classes. A few Chinese words also came in the wake of the Turks and Indians.

After the Arab conquest of Persia (A.D. 641-51) Arabic influence manifested itself at once on Persian. Its Semitic element in Pahlavi had prepared the language for it. Arabic came to Persia with a double prestige, it was the language of the conquerors, and it was the language of a new faith which began to spread quickly among the people. Persian nevertheless had its own glorious past, and it did not yield without a struggle and in many departments of life Persian held its own. Especially when an absolute break with the past could be affected, the native Iranian traditions were too strong for that, and the memory of glorious of the pre-Islamic Persia on the past continued unabated in the national consciousness through the romantic legends of the Shahnameh. The machinary of the administration remained Persian and Arabic had to borrow Persian terms like *'wazīr'* (Av. *vīčira* = discriminator), *'dīwān'* etc. The national name for King (*šāh*); records (*daftar*), Secretary *'dabīr'* etc. were never replaced by Arabic. In the matter of personal names, too, a great deal of the old Persian element persisted: 'Darāb', 'Sikandar', 'Rustam', 'Sāpur', 'Fīrūz', 'Khusrau' etc. and other names of old heroes and kings have continued in Islamic Persia, as also native words used as epithets (*'šer'*, *'āzād'*, *'dānišmand'*, *'āftāb'* etc.). But the force of Arabic was irresistable and Persian had to acknowledge the suzerainty of Arabic shortly after the conquest. The Persian converts to Islam took to the new language which was made an international language for the whole of the North Africa and the near east, including Spain on the west and the frontiers of India on the east and became the inheritor of the culture of the Greeks with the greatest enthusiasm; and a great deal of serious literature, literature of information — philosophical, scientific, historical, geographical, besides a considerable amount of poetry was produced in it by the Persians. The foundation of Arabic grammar and philology and Arabic humanism in general owe a great deal to the Persians. The position allowed to Arabic reacted on Persian: Arabic words began to be freely used in Persian without any hindrance, and Arabic constructions, Arabic terms of expressions, sometimes Arabic idioms and references to ideas and allusions specially Arab, besides Arabic metres all became acclimatised in Persia. This sort of thing went on till recent times and the result has

been for the Persian language something analogus to what we see in English. In the latter language, after the conquest of England by the French speaking Normans in A.D. 1066, the language abandoned itself to the influx of French and French words invaded English in all departments, frequently, making obsolete old English words and introducing new words with new ideas, things so much so that within few centuries the vocabulary of English became two thirds of French, and a great many French idioms and grammatical terminations were adopted. So too in Persian the vocabulary is now more than two thirds of Arabic, and one might say that any Arabic word in the dictionary is a prospective Persian word — it could be straight away used in Persian. Numerous vocables for which there had been no satisfactory Persian equivalents were freely borrowed. One part is to be noted. Arabic words came into Persian more through the influence of the school than through the influence of the Arabic speakers. In the first centuries of the Arab rule, of course, there were large bodies of Arabs in Persia, members of the ruling race, troops who garrisoned the strategic points and 'mullas' and 'darvishes' who preached the new faith: and their presence and influence was a factor in acquainting the Persians with Arabic. But when the Persian national movement set in from the 9th and 10th centuries, the Arabic speakers had gradually to give way: and besides in a few generations foreign settlers were bound to adopt the language of the land.

But Arabic became the cultural language of Islamic Persia; study of Pahlavi and Avestan ceased and with it their influence, and Arabic became the inspirer of Persian — through books, through the learned people. As a result of this, we find that Arabic could not keep its old pronunciation in Persia; words came as learned book words in their naked form — without the definite article *'al'*, for example, in the case of nouns and adjectives, which is so distinctive in Arabic. The contrast with Arabic words in Spanish, another Aryan language, which at one time came as much under the influence of Arabic as Persian and makes this clear. In Spain, there were large bodies of Arabic speaking people, Muslims and Jews, all through, before their final expulsion in 1492 A.D. and Spaniards got their Arabic words from them and thus Spanish forms preserve the *'al'*: thus *'alhambra'*, *'alcoran'*, *'alborge'* etc. So too in the case of Arabic words adopted into other European languages, direct from Arabic speakers, the *'-l'* of the *'al'* is generally there, e.g. *'algebra'*, *'alchemy'*, *'almanac'*, *'alcohol'; 'elixir'; 'alembic'* etc. Further, in Arabic phrases the 'zamma' or 'piš' is retained, the article 'al' not separated: 'Abdullah', 'Daulatunnisa', 'Tahqiqúl Hind'. It is impossible to give a list of Arabic words in Persian, it would mean quoting over two-thirds of the Arabic dictionary.

In recent years Persian has started to borrow words direct from the west and the European languages; that have perceptibly affected Persian are Russian, English and French. The influences of the first two is insignificant, but that of French extensive. These borrowed words are used not only in conversation, but also in the written language. This influx is not, however, due to the lack of resources of Persian vocabulary, which can still supply a sufficient fund of words to enable the Iranian poets and writers to express adequately their thoughts and ideas. Persian is, no doubt, lacking in new technical terms for the different branches of science, lacking as well in their expressions for abstract ideas which the needs and progress of time have called into being. The invention of new words and their affiliation are a slow and difficult process. The Persian writers avoided this course, as they found it easier to use European words when there was no Persian equivalent already in existence.

Persian Vocabulary: Loan-Words

Greek

diram, dīnār, piyāla, pingān, kālbud, sandal/ṣandal, kamrā, nargis, pista, almās, sīm, mord, etc.

Aramaeic

gazit/gazid, masiha, kašiš, caliba, kuništ; tabut, jhuhud, šanbad, kāsa, gunbaδ, gōr, etc.

Babylonian

Pīl, (Assyr. Pīru), barīd, abnus, manjanīq, qaisar, nūl, susan, kimiya, qānūn, qasr, burj, iqlim, etc.

Indian

kapi, šakkar, karkam, šagāl, saman, nargil, filfil, lak, čatrang, halila, vin, tambur, nāδ, nīlōpal, vaδuk, etc.

Turkish

alkhalla, urdu, qāiči, qābu, qurma, khatun, khān, 'alivardi, khānum, ghaličā, čāqu, tabaq, turk, dāvogā, baχši, baurči, bībī, begum, saughāt, etc.

Chinese

čā, kāγaδ, etc.

Armenian

goz, χāj, χāč, buryanδān, etc.

Russian

iskinās, varshaw, mushtuk, Imperātur, durushka, kāliskā, istiχān, samāvar, etc.

English

ardali, vāgūn, buy-iskā'ūt, fūt-bāl, bā'ikūt, kūp, panchar, gilas, etc.

French

parlimā̃, cabina, dimukrat, diplomaci, ultimatum, buro, ajhā̃, bumb, jhanrāl, majhor, capitaine, fabric, telephone, zeplene, aviateur, faculta, conferance, akadami, capsul, clenik, ideal, picnic, jhorjhā, voile, tableau, mujhā, actor, etc.

UNPĀṆINIAN FORMS AND USAGES IN THE CRITICAL EDITION OF THE MAHĀBHĀRATA *

By

V. D. GOKHALE, *Poona*

6. *Compounds*

The study of formation of compounds in the Critical Edition of the Mahābhārata is as interesting as other studies in the series.[1] In it generally the rules of Pāṇini as laid down in his *Aṣṭādhyāyī* are followed in this connection. We, however, notice certain departures from them, e.g., the rule regarding *rājan, ahan* and *sakhi* at the end of a tatpuruṣa compound requires that the final *-n* should be dropped.[2] But we have recorded below a number of instances where the final *-n* is not dropped. The variants recorded in the brackets with reference to Manuscripts always try to correct these archaic unpāṇinian forms.

Similarly Pāṇini lays down in another rule that the affix *a* is added to form the last member of a compound ending in *ṛc, pur, ap, dhur* and *pathin.*[3] But we have noticed four compounds ending in *pathin* which are not formed in accordance with the above rule.

Sometimes suffixes denoting possessions especially suffix *-in*, are added even to bahuvrīhi compounds, even though they are in no way necessary for the understanding.[4] Pāṇini teaches and practice confirms *-in* being readily added to compounds in *śobhā, śālā, mālā, dharma, śilā* and *varṇa.*[5] In Mahābhārata, however, this pleonastic idiom is used in compounds ending in *dhanus* and *gandha.*

Adverbs like *yathā, yāvat* and *tathā* etc., are compounded with some nouns. They are either adverbs of the type *yathākālam, yathāvayaḥ* or their

* Paper read at the Annual Session of the Linguistic Society of India held at Poona in 1956. It is based on the Critical Edition of first four parvans, published at Bhandarkar Research Institute, Poona.

1. For previous study of the series see E. D. KULKARNI, *BORI* XXIV pp. 83-97; *BDCRI* IV pp. 227-45; *NIA* VI pp. 130-39; *BDCRI* V.
2. *rājāhaḥsakhibhyaṣṭac* Pāṇini 5.4.91.
3. *ṛkpūrabdhūḥpathāmānakṣe* Pāṇini 5.4.91.
4. SPEIJER, *Sanskrit Syntax*, 227.
5. Cf. Pāṇini 5.2.132 and SPEIJER, *Sanskrit Syntax* 227.

second member is a participle ending in *-ta*.[6] Moreover, we have noted such compounds used adjectively. The compounds of this type are not common in the old language, and such a compound is used adjectively once in Ṛgveda and once in Atharvaveda. Whitney in his *Sanskrit Grammar* records four such compounds from Śatapathabrāhmaṇa.[7]

Compounds with *mā* and *na* are not wanting. They are easily interchangeable without any change in meaning.[8]

We have noted a few Dvandva compounds ending in singular, e.g., *nābhāgekṣvākum* 1.70.13.

We come across also irregular compounds ending in *varcas* (on the analogy of *brahmavarcasam, hastivarcasam*, etc.) 5.4.78.

Compounds like *gataśrīḥ*, 1.192.23 are worth noting in that Bhaṭṭabhāskara on TS 7.2.7.23 explains as *gatā prāptā śrīḥ yena saḥ*, which is the meaning intended here.

We have observed compounds where the order of component members is changed. The compound *mṛgasvapnabhaya* occurs for *mṛgabhayasvapna* in 1.2.46.

In a very few instances hiatus between two syllables in the body of the compound itself is observed. e.g., *nārāyaṇaurogataḥ*,[9] and this clearly indicates an influence of the characteristic of Middle Indo-Aryan languages.

Anomalous compounds are also met with which exhibit combinations of elements not usually put together, e.g., *yatrasāyaṁgṛhaḥ* (*muniḥ*) 1.41.1.[10]

Loose constructions with compounds occur occasionally. e.g., *niṣādālayam uttamam, sahasrāṇām anekānām*, 1.24.2.

1. Compounds with *ahan*

ekāhnā 3.14.9 (K 2 B Dn 2.3 D4. 6 G1 *ekāhāt*); 38.28; 69.2 (K4 *ekāhne*, D. 1.2 *ekahnāt*); 69.9 (K 3.4 D 1.2 *ekāhnāt*, BD 4.6 *ekāhāt*); 75.13 (K4 B3 D 4.6 *na ekahnācchatam gantā*, B 4 *na. hyekahnāc ca taṁ gantā*, T2 G2-4 *naikāhnā dūrato gantā*); 75.5 (Ś1 *ekāha*, K3 D 1.2 *ekāhnāt*, G 1 *ekāhnau*); 126.36 (B Dn D 4.6 *ekāhāt*, K3 D5 *ekāhenā mahi tena*);

6. Pāṇini does not mention the later type. Cf. also Speijer, *Sanskrit Syntax*, 219.
7. Whitney, *Sanskrit Grammar*, p. 513 d.
8. Cf. E. D. Kulkarni, *BORI* XXIV, p. 85.
9. Cf. E. D. Kulkarni, *Sukthankar Memorial Volume, BDCRI* V.
10. For other instances of Whitney, *Sanskrit Grammar*, 1314.

176.33 (B1 *ekaḥ sa*, B 1 M 2.4 Dc Dn D 4.6 *eko'pi*, G 2 *eko vā*); 222.79 (Dc Ds M *ekāhena*).

2. Compounds with *rājan*

sarvavānararājānau 3.147.25 [BD (except D1-3.5) T1 G1 *sarve* (for *sarva-*); S K 2.3 *-rājau tau*, B Dc Dn D 4-6 T1 M *rājānaḥ*, T2 G 2.4 *rājānam*].
airāvatarājānaḥ 1.3.139 [K1 Ñ1 *yad airā°*, V1 *yetraira°*, S (G1 missing) *yāvanto nāgarā°* (T1 G 4.5 *yady eva nāgāḥ sarpā vā*)].
mleñccharājānaḥ 3.186.29.
sarvarājānaḥ 1.181.26.
sādhirājānaḥ 2.11.21 [K *ādityāś cāpi rājāno*, D4 *ādityaṁ sādhi°*, T 1 G 3-5 M2 *°tyaś cādri* (T1 M2° *di*) *rā°*, M1 (inf. lin. as in T1 M2) *ātitaś cādirā°*].
kūrmarājānam 1.16.10.
gandharvarājānam 4.44.8 [K *°rājaṁ tam*: Cr *°rājānam* (as in text)].
devarājānam 1.217.15 (T1 *śaraṇam devarājaṁ te*).
dharmarājānam 1.214.2, 214.17 [K2 Ñ 2-3 V1 BD (except D1.2) T1, G1 M *āmantrya taṁ dharmarājam*]; 3.128.12 (D1.2 S *dharmarājam athābhavīt*); 153.30 [S (except T1 G1) *°rājaṁ ca*]; 154-2 (K 4 *dharmarājaṁ ca*, S *dharmarājaṁ vai*).
nāgarājānam 3.75.17 (K1-3 Dn D 1-5 G1 M1 (*nāgarājaṁ tam*, K4 Dc D2.3 T1 M2 *°rājaṁ tu*).
parvatarājānam 3.135.4 (D5 *parvataṁ āruhya*, T1 G1.2 M *parvatarājendra*); 155.4; 160-10 and 11.
maṇḍūkarājānam 3.190.41 (K1.2 B2.4 Dn D 4.6 G1. 3 M1 *maṇḍūkarājam*, Dc *taṁ*).
matsyarājānam 4.31.23 [D 6 G 1.3 M5 *ma-* (G1 *mā-*) *tsyarājaṁ ca*, T1 G2 M1-3 *°rājaṁ tu*, T2 *mātsya°*), 32.8].
madrarājānam 1.181.30 [K2 *°rājaṁ ca*, Ñ2. 3 V1 BD (except D2.5) *madrādhipatim*].
rājarājānam, 3.265.23 (K1 *rājarājatve*, K2.3 *°rāja tvam*, Dn *yakṣarājaṁ tam*, TG 1.2.4 *rājarājaṁ ca*, M *°rājaṁ tvam*).
dharmarājñā 3.48.38, 104.5 (TG 2.3 M *dharmarājena*).
matsyarājñā 1.1.115, 4.29.4 (Ś1 *matsyarājñas te*, K *°rājña te*, B4 Dn2 D 6.11.12 *°rājena*).
virāṭarājñā 4.11.12.
dharmarājñe 3.37.35 (B3 D5 TG *°rājam*, Dc D4c *°rāje*, Ś1 K1.2 Dn D 1-3 *dharmarājāya dhīmān sa*).
maṇḍūkarājñe 3.190.31 (G1 M *maṇḍūkarājāya*).
nāgarājnñaḥ 1.16.13.
pitṛrājñaḥ 2.8.38 (G3 *°rājasya dhīmataḥ*)
kirātarājñaḥ 3.174.11.

matsyarājñaḥ 4.17.5 (B1 D4 S *matsyarājasamakṣam*, D 10 °*rājasamīpam*).
virāṭarājñāḥ 4.7.11 (S *virāṭarājasya babhūva vai priyaḥ*); 11.1 Ś1 B 1.2 *virāṭarājas*, D2 °*rājñā*, S °*rāje*).
śālvarājñaḥ 1.96.38 (KOÑ 1.2 B Dn D 1.2.4 *śālvarājasya*, S *bhīṣmas tasya paraṁtapa*).
pūrvarājñāṁ 3.282.7 (G 2.4 *pūrvarājakathāśryaiḥ*).

3. Compounds with *sakhin*

pitṛsakhā 2.23.25 (B2 6 D12.6 *pitṛsakhaś*, D 3.5 G 3 *priyasakhā*).
bhāradvājasakhā 1.121.8.
priyasakhāyau 1.210.5.

4. Compounds with *pathin*

saṁsiktamṛṣṭapanthānam 1.168.19 (Ś1 K1 °*ktamṛṣṭamārgaṁ ca*, K4 °*ṣṭamārgaṁ ca*, T1 G2.3 *siktasammṛṣṭa*°).
siktasaṁmṛṣṭapanthānam 1.213.32 (K3 *saṁmṛṣṭasamsiktapatham*).
rathapanthānam 3.167.2.
satpathi 1.206.10 (Ś1 K1 Dn 3 G 3 *satpatha*-, Ñ3 *sadvarte*, V1 *sadvrataiḥ*, B 3.6 Da D 1.2.4.5 T3 G3.4 *satpathe*).

5. Compounds with *dhanus*

dṛḍhadhanvinam 3.40.11.
gāṇḍīvadhanvinam 4.48.3.
ugradhanvinām 3.175.4 (K1. 4 B 3.4 D 3.6 °*dhanvanām*).

6. Compounds with *gandha*

uttamapuṇyagandhi 3.112.8 (K3 °*gandhavantī*).
puṇyagandhinā 3.44.2.
puṇyagandhinām 3.44.2.

7. Compounds with *dharma*

martyadharmiṇā 3.152.4 (Ś1 K1.2 B3 Dn D3.4.6 G4 *martyadharmaṇā*).
rājarṣidharmiṇi 3.275.29 (some Mss. *rājarṣidharmaṇi*, K1.2 *sadvṛttadharmiṇi*).

8. Compounds with adverb as the first member but used adjectively.

akutobhayāḥ 3.81.11, 136.18, 137.1, 266.14.
evaṁvīryam 3.126.23 (D1.2 *ati*, BDc Dn 4.6 *īdṛsaṁ janayiṣyasi*).
evaṁvrataḥ 3.112.13.

atathocitā 3.64.17 (B2.3 *ayathocita*, D1 *eva śocate*, G 1.2 *mārgamāṇāṁ tathocitā*).

atathocitāṅgaḥ 3.225.11 [TG 1.4 M °*citaḥ sa* (M1 *san*)].

kathaṁrūpā 3.110.8 [Ś1 K1.2 *kathaṁ ca rūpā* (K1 °*pa*)].

kathaṁyuktaḥ 3.135.10 [B1.2 (both margin.). 3 *mṛto*, G 4 *vṛtto*].

kiṁnimittam 3.147.2.

kiṁparāḥ 3.94.12 (K3 Kc *pare*, K4 *parāḥ* B2 M *kalpitāḥ*, Dn D 4 *kampitāḥ*, D3 G4 *kiṁ purā*, D5 *ke cana*, G1 *kiṁ varaḥ*).

kiṁprabhāvaḥ 3.94.3.

kimācārāḥ 3.1.4.

kimāhārāḥ 3.1.4.

kiṁvīryaḥ 3.258.4.

kiṁvīryāḥ 3.188.6 (K3 *kiṁkāryāḥ*).

kimāhāravihāriṇaḥ 3.188.6 (M1 *kimācāra*°).

kimāyudhaḥ 3.188.6 (M1 *kimāhārāḥ*).

kiṁvasānāḥ 3.188.6.

kiṁparākramaḥ 3.258.4.

kvasthaḥ 3.181.22 (M *kvatha*).

kvasthāḥ 3.294.41.

tathāgrataḥ 1.33.5 (G3 *śrutam*).

tathādīnamānasam 3.162.11 (T1 G3.4 °*dīnavadanām*).

tathāyuktam (*nalam*) 3.74.7.

tathāyuktām 3.94.27.

tathāyuktena 3.139.20.

tathārūpā 3.65.9; 4.23.4 (K Dn 1-3-4-8-12 *yathārūpa*).

tathāvidhau 3.136.15 (Ś1 K1.2 *putrāś cāsya tathāvidhāḥ*).

tathāvīryāḥ 4.47.10.

purākarma 3.198.22.

yathartukālaramyāḥ 3.248 (Ś1 *athartu*°, D5 *sarvartu*°).

yathartuvarṣī 3.186.44 (T1 *akālavarṣī*).

yathākṛśān 3.153.17.

yathāgatena 3.42.41, 275.58.

yathācite 3.191.25.

yathācitau 3.41.4.

yathāprakṛtiḥ 3.198.70.

yathāpratijñābhiḥ 4.11.13.

yathāpramāṇataḥ 3.242.21.

yathābhāvasamāhitam 3.224.3 [Ś1 K1.3 B4 Dn D 1.2.5 M1 °*bhāvam* (for *bhāva*-) Ś1 K D1-3.5 -*samāhitā*, T1 G1. 2.4 *samanvitam*].

yathābhilaṣitam 3.281.28.

yathārūpāṇi 3.153.7 (T3 G2 °*rūpaṁ na*, G4 °*rūpāṁ na*).

yathāvidhāḥ 3.252.10.

yathāvṛttaḥ 3.6.11.
yathāśrāntān 3.153.17.
yathoktāni 3.185.30.
yathocitān 3.90.21.
yathopadiṣṭaḥ 3.280.10.
yathāsvāni 4.30.15 (Dn 1 D10 *yathāsvaṁ te;* D6 *yathārhaṁ te;* D8 *svāni svāni,* Ca *yathāsvāni;* S *svāni svāny atra kṣatriyāḥ,* TG 2 *svāni narādhipāḥ,* G1 *svāny atra pārthivāḥ*).
yathāsvān 4.50.1.
śvomaraṇam 3.81.126 (K2 Dn D5 *naitasya maraṇaṁ bhavet,* D2 *naivātmā maraṇam vrajet*).
śvobhūte 3.280.9; 299.28 (K1 *śobhane*).
sarvatoramyaiḥ 3.146.3.
sadāpuṣpaphaladrumaḥ 3.139.24 (T1 G1 *sadāphalayutadrumaḥ*).
sadāphalaḥ 3.297.54 and 55.
sadāphalaiḥ 3.132.1.
sadāsrotaḥ 3.125.13.

9. Compounds with the order of component members changed.

saṁvatsarartavaḥ 1.21.6.
bāhulyabaladarpitaiḥ, 2.20.18.
vṛṣabhaikādaśaphalam 3.83.11.
puṣpavikacaiḥ 3.146.2 (K4 D1.2 *vikacaiḥ puṣpaiḥ*).
yojanaviṁśānām 3.186.63 [K3 D 1-3 °*koṭinām,* Ś1 K1-3 D5 *yojanānām* (K3 *yena nāvām*) *samantādd hi*].
vāraṇamattavikramaḥ 4.10.2 (Ś1 D8 *vāraṇarājavikramaḥ;* B5 Dn 1 D1.5 °*tulya*°, D7.95 *mattagajendra*°).
araṇyanityaḥ 1.106.7.
dharmanityaḥ 1.103.20 (S °*nityo hi dharmasya*).
śastranityaḥ 1.94.62.
parvatavāsanityaḥ 3.249.7 (K2 °*vāsamukhyaḥ*).
vananityaḥ 3.126.7 (K1 T1 *vane* (for *vana*°).
taponityāḥ 3.228.8 (T1 *nītijñaś* caiva *rādheya*); 3.110.16 [Ś1 K3 D3.5 *iti khyāto,* K1.2.4 D 1.2 T1 *tato nityam* (T1 °*tyo*)].
dharmanityena 3.126.36 (D1.2 *vīryeṇāmita buddhinā*).
taponityasya 3.112.15, 11.6 (Ś1 K D3 G1 *tapoyuktasya*).
vidyātaponityāḥ 3.93.15 (K3.4 Dc D1-3.5 T1 °*yukta*).
dharmanityasya 3.24.10.

10. Compounds with hiatus -

nārāyaṇaurogataḥ 1.16.35 (Ko 2.4 D 5 °*vibhūṣaṇam;* K1 °*śirogataḥ,* Ñ3 G 2.5 M °*śiropagaḥ* B4 °*manāgataḥ,* D2 °*śiremaṇiḥ;* TG 6 *sa ca nārāyaṇaṁ gataḥ*).

devarṣīṇām 1.114.38 [Ś1 Ko 1.3 N B Da D 2.4.5 M *devarathānām ca;* K4 °*gaṇānāṁ ca* Dn DG6 °*nikāyānām;* G2.4.5.6 (Sup. lin.) °*maharṣīṇāṁ*].
pūrvarṣiḥ 3.40.54 (K2 *divyāny asrāṇi yaihṛ bhavān;* K4 *cakṣuḥ pūrvavibhavanam;* S (T2 G3.4 om) *cakṣuḥ pūrvaṁ munir bhavān*).

11. Anomalous compounds.

yatrasāyaṁgṛhaḥ 1.41.1, 3.13.10.
yatrasayam pratiśrayām 3.62.26 (S. °*pratiśrayāt* G1 °*tanāśrayām*).
yatrecchakanivāsāḥ [K Dc D2-5 T1 M1 *yathecchaka* (for *yatrecchaka*), BDC D2. 6 G3 T1 M -*nipātāś ca* (for *nivāsāś ca*).]

12. Compounds with loose construction.

putradāreṇa 1.45.25
svadāre 1.173.24 [D5 *svapatnyām;* Ñ2 V1 B (except B6) Da Dn D 1.2 *svadāreṣu*].
putradāram 3.131.9 (Dn *putradārādi naṅkṣati*).
paradārā 4.13.14 [D1 *bhartṛdārā*°, D4 *dārā sma,* G2 M4-5 *paradāro*°, Cap. *dārāḥ smaḥ* Crp. *anyadārāḥ smaḥ* Ca K as in text (Cr only *dārāsmi*)].
paradāre 4.13.15 (Ś D3. 8 *paradāreṣu te,* G3 °*dāraratā*).
gaṅgayamunasaṅgame 3.83.80 (for metre!).
bhadramanā 1.60.81.
bhadramanām 1.60.58 [B (except B5) D (except D2) °*manā* TG °*madām* (G2 °*tam,* G3 *tā*) (Ñ 3 *haribhadrāmanāgopi*)].
mālyadāmaiḥ 2.19.18.
savyasācau 3.89.29 (ÑG1 °*sācini*).
pṛthiviñjayaḥ 4.36.1, 63.7.64 (D4 *pṛthivīpatiḥ*).
bhūmiñjayaḥ 4.39.21.
sāgaraṁgamā 3.61.34 [T2 G (G1 missing) sāgaropamām)].
padmakiñjalkasaprabhām 1.9.18 [K3 S (except G6 M1) °*samibhām* (M 3 as in text) Ñ V1 D2 *suprabhām;* BDa D3. 4.6.7 °*varcasām*].
matsyasagandhā 1.51.55 (Dn D1 G3 *sa matsyagandhaiva,* D3-5 °*sugandhaiva,* G 4.5 ° *sagandhaiva*).
matsyasagandhinī 1.57.53 [Da *matsyagandhā varāṅganā;* DS *tasyā matsyasugandhinī;* TG1.2.4-6 M *sa tasya* (T1 *ca syai,* T2 *kanyā* G1.2.4-6 M *casītā,* M3 *tu syan;* M5 *to sā*) *matsyagandhinī*)].
haṁsasadharmāṇam 2.38.38.
mṛgapakṣisadharmāṇaḥ 3.116.12.
sañjalpanasahāsanāt 3.1.27 [K2 BDc Dn D4. 6 *sañjalpāc ca;* D5 *sañjalpen* (G1 *samsargeṇa,* G2 *sambhāṣana-*)].
sarṣipurogamāḥ 3.80.47 (S1 K1 *sarṣigaṇās tatha;* K2. 4 Dn D3-5 *sarṣigaṇāḥ purā,* D1-2 *ṛṣipurogamāḥ*).

sūryendusaprabhe 3.194. 11 [B1-3 D (except D 1.3.5) G2 *sūryasamaprabh*].
savajrāyasagarbham 4.30.10 [Dn 2 Cnp sp *sannāhāyasagarbham*, S (M2 om) *dṛḍhamāyasagarbham*, Ca as in text, Cc.s. cite *vajrāyasaṁ*].
kurūṇāmṛṣabham 1.112.1; 3.156.5.
kuruṇāmṛṣabhaḥ 1.160.12, 163.6, 182.5; 3.3.15. 247 [D2 T3 G (except G1) M1 *adhipo* (for *ṛṣabho*), 26.2, 120.22 S1 K1. 2 Dc *adhipaḥ* (for *ṛṣabhaḥ*), D10 *eṣa vai dhararājas tu*].
pituḥ priyacikīrṣayā 1.94.85.
purorvaṁśavivardhanaḥ 1.112.7.
bhāskarasyātmasambhavaḥ 1.126.5 (K 2.4 °*syaṅgasambhavaḥ*).
mamāgamanakāṅkṣiṇaḥ 1.144.11.
rājñaḥ priyacikīrṣayā 1.155.48.
vaḍavāmukhādīptāgnes toyahavyapradam 1.19.16 (K1 °*toyāgni*, K4 Ñ 3 Da 1 °*dīptāgni*).
viśāṁ patiḥ 1.169.12, 188.4.
viśāṁ pate 1.176.33, 187.22 [Ñ 3 B (except B 5) D2 *mahīpate*]; 192.17. T 3 G2-4 *viśāṁpatim*); 192.25; 194.11, 18; 196.23, 197.25, 198.13, 205.18, 225.18.
astreṣu gatamānasaḥ 3.163.46.
gavāṁ tīrthe 3.93.3 (D2 *snātas tīrthe*; D5 *mahātīrthe*).
vṛṣṇīnām ṛṣabheṇa 3.35.85.
tava vīrya paritrātaḥ 3.91.7.
tasya darśanatṛṣṇām 3.142.4.
piturhṛdayatoṣaṇaḥ 3.261.6.
bhayasya ajñaiḥ 3.146.28 [Ś1 K1.2 *bhayaprājñaiś ca*, BDn D 4-6 T 2 (after corr.) G3 *bhayānabhijñaiḥ*].
raves tamisrāgamanirgamān 3.161.10.
rāmeṇa kṛtamanyavaḥ 3.116.25.

PURĀTANA PRABANDHA SAṂGRAHA AND THE DATES OF CHANDA AND JALHA

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Nearly twenty years ago, Muni Jina Vijaya compiled under the title 'Purātana Prabandha Saṃgraha' a number of *prabandhas* connected with the themes of the *prabandhas* of Mērutunga's 'Prabandha Chintāmaṇi'. It was published in the wellknown Singhi Jaina Series. In this compilation he also included two *prabandhas* under the captions Prithvīrāja Prabandha[1] and Jayachanda Prabandha.[2] In these *prabandhas* there appear four *chhappayas*, of which three are found in the Nāgari Prachāriṇi Sabhā, Kashi edition of Chanda's 'Prithvīrāja Rāsau'.[3] Therefore a new light has been thrown on Chanda and his work 'Prithvīrāja Rāsau' by the publication of these two *prabandhas*, and this has been discussed by Muni Jina Vijaya in the Prāstāvika Vaktavya (preface) of the work.[4] While discussing his views, I propose to put forward my own conclusions here, based on these new data, about the dates of Chanda and also of another poet, Jalha.

In the aforesaid Prāstāvika Vaktavya, under the sub-heading 'Saṃgraha kē kuchha mahatva kē prabandha' Muni Jina Vijaya writes: "Here I want to draw the attention of the scholars on one thing, that from the *prabandhas* dealing with Prithvīrāja and Jayachanda, which have been included in this work, we find that the contention of certain scholars about the authorship and date of 'Prithvīrāja Rāsau', the wellknown Hindī epic, that the whole work is spurious and a creation of about the seventeenth century is not altogether correct. The three or four Prākrita verses, which are met with in the aforesaid two *prabandhas* (pp. 86, 88, 89 of Purātana Prabandha Saṃgraha), have been looked for in the 'Rāsau', and out of these four verses three have, though in a deformed condition, yet verbatim been found out in the same. This proves that the poet, Chanda was decidedly a historical personage and a contemporary of Prithvīrāja, the Hindu ruler of Delhi; that he was held in high regard by him and was his court-poet. It was he who, with a view to recite the glorious deeds of Prithvīrāja, composed a poem in

1. Purātana Prabandha Saṃgraha, p. 86.
2. *Ibid.*, p. 88.
3. Prithvīrāja Rasau, pp. 1496, 2182, 2502.
4. Purātana Prabandha Saṃgraha, Prāstāvika Vaktavya, pp. 8-10.

the Dēśya Prākrita language, which (poem) was known by the name of 'Prithvīrāja Rāsau'."[5] Hereafter he quotes the three verses from the *prabandhas,* and giving their parallel reading from the 'Prithvīrāja Rāsau' published by Nāgarī Prachāriṇī Sabhā, Kashi, he emphasises the need of an authentic edition of the work.[6]

We are not concerned here with the necessity or otherwise of an authentic edition of 'Prithvīrāja Rāsau', or even with the authenticity of the work. We are concerned here only with the able compiler's views regarding the date of 'Prithvīrāja Rāsau' and its author Chanda.

Muni Jina Vijaya is perfectly justified in holding that the work 'Prithvīrāja Rāsau' cannot be a fabrication of the seventeenth century, as the two *prabandhas* mentioned above contain verses composed by Chanda and one of the Mss. containing these two *prabandhas* is dated 1528 V.E.[7] But is he justified to hold the above-quoted view about Chanda and his date only because certain verses appearing in the name of Chanda and composed in Dēśya Prākrita are referred to in the *prabandhas* in which Chanda appears as a court-poet of Prithvīrāja and these *prabandhas* are found in Mss. belonging to the fifteenth century of the Christian Era ?

So far as the language of these verses is concerned, it continued to be in use even upto the fourteenth century of the Christian Era, as is borne out by 'Prākrita Paingalam'[8] and many other works. Hence the date of the Ms. viz. 1528 V.E., even combined with the form of the language used in the aforesaid verses, cannot be sufficient to establish that the author was a court-poet of Prithvīrāja, who lived in the twelfth century of the Christian Era.

As for the dependibility of the account given by the writer or writers of these two *prabandhas,* in which Chanda appears as a court-poet of Prithvīrāja, the able compiler's view could have been justified only if a substantial portion of the work of Chanda had been referred to in these *prabandhas* and the facts stated therein could be corroborated with the facts known from history. But apart from that, I will draw the attention of the scholars to a very important fact about these verses which has somehow been overlooked by the learned compiler of 'Purātana Prabandha Saṃgraha'.

If we closely examine the two *prabandhas,* we find that out of the four verses regarded by the learned compiler of 'Purātana Prabandha Saṃgraha' as compositions of Chanda, two are really compositions of another poet,

5. *Ibid.,* pp. 8-9.
6. *Ibid.,* pp. 9-10.
7. *Ibid.,* p. 3.
8. Prākṛta Paingalam ed. by C. M. GHOSHAL, Preface, p. vii,

Jalha and not of Chanda. This is borne out by the name of the poet appearing in the last two feet of these two verses. These verses are reproduced below from the text of Jayachanda Prabandha as it appears in the 'Purātana Prabandha Saṃgraha':[9]

(i) *Triṇhi laksha tukhār sabala pākhariain jasu haya,*
Chaūdasain mayamatta danti gajjanti mahāmaya.
Vīsa lakkha pāyakka saphar phārakka dhaṇuddhara,
Lhusaḍu aru baluyāna saṃkha ku jāṇai tāha para.
Chhattīsa laksha narāhivai vihi vinadiō hō kima bhayau,
Jaichanda na jāṇau 'Jalhu' kai gayau ki mūu ki ghari gayau.

(ii) *Jaitachandu chakkavai dēva tuha dusaha payāṇau,*
Dharaṇi dhasavi uddhasai paḍai rāyah bhangāṇao.
Sēsu maṇihin saṃkiyau mukku hayakkari siri khandio,
Tuṭṭaō sō hara dhavalu dhūli jasu chiya taṇi mandio.
Uchchhaliu rēṇu jasaggi gaya sukavi 'B(J) alhu' sachchaū chavai,
Vagga indu bindu bhuyajuali sahasa ṇayaṇa kiṇa pari milai.

It may also be noted that only the first of the above two verses is found in the 'Prithvīrāja Rāsau' published by the Nāgarī Prachāriṇī Sabhā of Kashi,[10] and even this verse is not found in the Mss. of the work belonging to other lines of transmission of its text. At least so far during the last more than two years of my work on the text of the 'Prithvīrāja Rāsau', I have not met with these two verses in any of the Mss. of the other lines of transmission of the text of this work.

How for the *prabandha*-writer may be relied upon for whatever he says, may further be gauged from the fact that he is not content with merely quoting these verses, but introduces both these verses with the following words:

(i) "tadanu Chanda Balidda Bhaṭṭēna śri Jaitra Chandra pratyuktam".[11]

(ii) "tēnaiva pūrvamuktam".[12]

Therefore, it is obvious that the *prabandha* containing these references is nothing short of a fabrication done with the help of material supplied by a certain work of Jalha, and should in no case be treated with anything like historical seriousness. It may be that the other *prabandha*, viz. Prithvīrāja

9. Purātana Prabandha Saṃgraha, pp. 88-89.
10. Prithvīrāja Rāsau (Kashi ed.), p. 2502.
11. Purātana Prabandha Saṃgraha, p. 88.
12. *Ibid.*, p. 88.

Prabandha also was similarly written, with the only difference that the verses referred to in this case happened to be the compositions of Chanda.

Consequently the views of the learned compiler of the 'Purātana Prabandha Saṃgraha' about Chanda and his date seem to be hardly tenable.

Yet a peep into the textual history of these *prabandhas* does help us in arriving at some approximation about the dates of Chanda and Jalha and it will be useful to turn to it.

As has already been mentioned above, the two *prabandhas* in which the four verses occur are Prithvīrāja Prabandha and Jayachanda Prabandha, of which the former is available in two *prabandha-saṃgrahas* which have been named 'P' and 'B' respectively, and the latter is presentely available in 'P' only; the folios in which the latter might have occured being missing from 'B', it cannot be said with certainly that it occurred in 'B' also

Further, 'P' collection contains 40 *prabandhas* while 'B' contains 71 *prabandhas,* though the Ms. of 'B' being incomplete, many of its folios missing from it, only 54 *prabandhas* are obtainable from it. And a number of *prabandhas* in the two *saṃgrahas* relate to common themes, though nothing can be said about their texts without seeing the Mss. of 'P' and 'B', except with regard to the following 8 *prabandhas* which have been compiled in the 'Purātana Prabandha Saṃgraha':

1. Vikrama saṃbandhē Rāma-rājya Kathā prabandha,
2. Vasāha Ābhada prabandha,
3. Kumārapala kāritāmāri prabandha,
4. Vastupāla Tējaḥpāla prabandha,
5. Prithvīrāja prabandha,
6. Lākhana Rāula prabandha,
7. Nyāyē Yaśōvarmma nṛpa prabandha, and
8. Ambuchīcha nṛpa prabandha.

Yet this number is sufficient for our present requirements.

On a comparison of the two collections 'P' and 'B', the following conclusions seem to be inevitable :

(i) The authorship of the above eight *prabandhas* compiled in the two collection is identical: this is borne out by the fact that the text of these *prabandhas* in both of them is almost the same.

(ii) The two collections must have belonged to two distinct lines of transmission for their common text: this is borne out by the fact that no such errors or lacunae are found in them as are common to the two collections.

(iii) In both the collections interpolations have been effected independently of each other: this is borne out by the fact that both the collections contain sentences, passages and verses not common to each other and of the nature of additional matter.

(iv) This additional matter should have been in the form of adscripts at same stage earlier than the present one, as the Mss. of 'P' and 'B' are not said to contain any such adscripts.

It is therefore evident that from the authorship of these eight *prabandhas* down to the Mss. of 'P' and 'B' referred to above, their texts should have passed through at least three stages of transmission in the following manner:

The authorship of the *prabandhas* common to 'P' and 'B'

The authorship of 'P' collection	The authorship of 'B' collection
The authorship of interpolations in the form of adscripts in 'P' collection	The authorship of interpolations in the form of adscripts in 'B' collection
Present Ms. of 'P' (1528 V.E.)	Present Ms. of 'B' (the last folio being missing, the date of the Ms. is not known)

Now, if we make an allowance of 50 years an average for each of these three stages of transmission of the text, which I do not consider to be excessive in any case, it may be easily surmised that the authorship of the *prabandhas* common to the two collections may be placed at about 1378 V.E. And, if we place the date of composition of the verses incorporated in the two *prabandhas* even fifty years ahead of this, the date of their composition approximates to about 1328 V.E.

The date of Chanda, therefore, approximates to 1328 V.E. The date of Jalha however cannot be approximated in the above manner, as the Ms. of 'B' is mutilated at the place where the Jayachanda Prabandha, in which the above-quoted verses of Jalha occur, should or might have occured. Yet the probability is clear that Jalha may be nearly as old a poet as Chanda, for it is quite likely that the author of Jayachanda Prabandha may be the same as that of Prithvīrāja Prabandha.

A NOTE ON THE USE OF THE GENITIVE CASE IN EARLY HINDI PROSE *

By

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In early Hindi prose the genitive case covers a very wide range of expression. Besides genitive of possession, as—*maĩ mathurā kī ayī huyī kans kī dāsī hū̃* (I am maid-servant of Kans and have come from Mathura—PS); *rājā udayabhānu kā mandir* (the temple of king Udayabhanu—NKP); *candrāvatī kī sakhiyā̃* (playmates of Candravati.—RKK); and genitive of relationship, as—*maĩ rājā raghu kī beṭī hū̃* (I am daughter of raja Raghu.—NKP); *ye bhānje kans ke dou* (these two nephews of Kans.—PS), it has the following functions or expressions:—

(a) The genitive acts as the subject of the action denoted by the word it qualifies—*ekā eki śri kṛṣṇa kā calanā sun* (hearing suddenly the sudden departure of Krishna—PS); *balrāmji kā ānā jān sab gwāl bāl dauḍe āye* (hearing the arrival of Balramji all gwalbal came running—PS); *unkā gānā nācanā sun dekh baldevjī bhī nācane gāne lage* (having heard and seen them singing and dancing Balramji too began to sing and dance—PS); *āp kā bacan laḍakī ke jilāne kā sādhan hai* (your blessing is an instrument of bringing back this girl to life—NKP); *jānā mahārāj mahārānī aur guśāĩ mahendar giri kā rānī ketakī ke liye* (going of the king, the queen and the saint Mahendragiri for the queen Ketaki—RKK).

(b) The objective genitive in all the three texts is a more frequent idiom than the subjective genitive and it functions as the object of the action to which it governs (direct or indirect), thus—*kapaṭī ke mārane kā kucha doṣa nahĩ* (there is no harm in slaying a deceit—*PS*); *itani bāt ke sunate hī uṣā citrarekhā ke nikaṭ aya madhur bacan se bōlī* (hearing this Usha came near Citrarekha and said sweetly—PS); *sarāhanā jogi ji ke sthān kā* (worshipping of the mendicant's place—RKK); *aur lānā usī bhabhūt kā jo gurūji de gaye the* (and bringing of the ash bestowed by the saint—RKK). In Rānī Ketakī kī Kahānī, the noun of action takes its object in the genitive thus: *is kahāni kā kahanewālā āp ko jatātā hai* (the relater of this story relates it to you—RKK).

* Prem Sāgar—by Lallūlāl, Nasiketopākhyan—by Sadal Misra, Rānī Ketakī kī Kahāni—by Insā Allā Khān. Abbreviations PS = Prem Sāgar; NKP = Nasiketopākhyan; RKK = Rānī Ketakī kī Kahāni.

(c) In Nāsiketopākhyān, Prem Sāgar and Rānī Ketakī kī Kahānī the subjective genitive has an alternative expression, that is, it is used as instrumental genitive (having the sense of by), thus—*mahārāj aur mahārāni ne apane beṭe ke likkehuye par sone ke pāni se yõ likhā* (the king and the queen wrote with gold-water on the letter written by their son—RKK); *talwār ke bal ham tumhārī dūlhan milā dẽge* (we shall arrange for your meeting with your bride by the strength of sword—RKK); *yah adharm ajāne merā huā* (this unpious deed has been done unconsciously by me—PS).

(d) Reciprocal genitive:—Examples of reciprocal genitive are not available from Rānī Ketakī kī Kahānī and Nāsiketopākhyān. But some astray examples are to be found in Prem Sagar; thus—*paraspar apakā karne wāle jano ke gaṇakā ke jan* (the members of the society of mutual assistance —PS). In fact this is the solitary instance of reciprocal genitive, which I could gather from Prem Sāgar. The special feature to be noted is that both the genitives are here as possessive genitive.

(e) Partitive genitive:—The occurrence of partitive genitive in all the three texts are very frequent. It expresses any thing as the part of a whole or group, thus—*us jhunḍa kī yah gāy idhar calī ayī* (this cow belonging to that herd is led astray—PS); *yah us sabhā kā sadasya hai* (he is the member of that society—PS).

Examples of genitive governing a phrase or sentence is very common idiom in these texts, thus—*un jhagaḍālū dẽtyõ me kā mẽī ek dētya hū̃* (I am one of the members of the groups of those quarrelsome demons—PS); *jāre un pandavõ me kā ek le ā* (you go, and bring one of the members of the Pandavas—PS). The reduplicated form of genitive in all the three texts is employed to express completeness, totality or intensity. The frequency of such examples is greater in Prem Sāgār* than the other two texts (that is, Nasiketopākhyān and Rānī Ketakī kī Kahānī) thus *unke pīche rathõ ke tātõ ke tā̃te drṣṭa āte the* (after him chariots after chariots — group of chariots — were seen—PS); *yah sun sab ke sab cakit rah gaye* (hearing this all were wonderstruck—NKP); *is par sabhā kī sabhā vidroh kar uṭhī* (on this account the whole assembly rebelled—PS).

Reduplicated partitive is also used as adjective in the superlative degree; thus: *miṭhē kā mithā* (very sweet), *ache kā acha* (best) and *sundar kā sundar* (most beautiful).

(f) The appositional genitive or genitive of identity is a rare idiom in early Hindi prose. But the possibility of such occurrence is not completely

ruled out. In Prem Sāgar the appositional genitive is much more frequent than Nāsiketopākhyān and Rānī Ketakī kī Kahānī, thus—*hamāre dono ke mārane kī icchā kī* (he desired the killing of we two—PS); *tumhāre dono ke liye akrūr mathurā se āye hāī* (Akrur has come from Mathura for you two —PS); *merā-terā dono kā aśubh mānate hāī* (he desires ill of we two, you and I).

Under this we can also treat examples like—*aisī jor kī ā̃dhī ayī kī din kī rāt hogayī* (such a violent storm came that day turned into night—PS); *usne aisī māyā kī ki din ki mahā ādherī rāt hogayī* (he spread his māyā and day turned into very dark night—PS).

(g) The genitive of race or family is a special idiom and is just reverse of the partitive genitive, thus—*yadu kā baṁsa* (family of Yadu—PS) and in, *kahā̃ sūrya kā baṁsa ki jiskī kīrti samast lok me prasiddh hai* (my lord! I belong to the family of Surya whose superiority is acknowledged in the universe—NKP) where the whole is referred to the part.

(h) The genitive is also employed to express the temporal sense, thus, *vaiśampāyan kahate hāi ki he rājā das din ke bītane par candrāvatī āyī* (Vaishampayan says, 'O King! after ten days Chandravati appeared—NKP); *yah āṭha din kī bāt hai* (this is the happening of ten days); *ek rāt kī rānī banāyī* (made her queen for one night—NKP); *adhī rāt ke samaya kṛṣṇa pahũce* (Krishna arrived at mid of night—PS); *ek din kī bāt hai ki māī ne ek gāya ek brahmana ko diyā* (one day it so happened that I gave a cow to a brahmin—PS).

The temporal genitive in these texts is frequently employed to express the termination of a period, thus—*rānī ketaki ne do mās kī tapasyā kī* (rānī Ketakī did a worship of two months duration—RKK); *jab dwāpar ke ant me śri kṛṣṇa awatār lẽge* (by the end —termination — of Dvāpar, when Krishna will take birth—PS); in, *tīn din ke bitane par we jīwit lauṭ āye* (after the termination of three days he came back alive—NKP) the temporal terminational genitive is employed as temporal subjective genitive.

(i) The genitive in these texts is also employed to express some place, thus; *parvat ke coṭīpar kā warf* (the snow of the peak of a mountain); *jamunā ke tīr parvat sam jā baiṭhā* (he fixed himself as a mountain on the bank of the river Jamuna—PS); *mathurā kī nāriyā̃* (women of Mathura).

(j) The genitive of age is a special idiom in these texts, thus—*jab uṣā sāt waras kī huī* (when Usha attained the age of seven years—PS); *hamārī buḍhāpe ki awasthā ki ek kes kālā bhī nahī̃* (I am overpowered by my old age and not a single hair on my head has remained black—NKP).

(k) Genitive in these texts sometimes appears where dative of direction was expected; thus: *uttar ke gaye balarām abhī nahī̃ lauṭe* (gone for the north, Balram has not yet returned—PS).

(l) The frequent occurring of genitive for the dative of advantage is an essential feature of the early Hindi prose. Thus—*ek-ek rānī ke das-das putra aur ek-ek kanyā thī* (ten sons and a daughter were to every queen—PS); *aisī bāt na to dekhane me ayī na to sunane me ki binā bhāryā kisī ke putra ho* (this is neither seen nor heard that a son is born to a person without a wife—NKP); *is deś ke rājā ke ek putra na huwā* (not a son was born to the king of this country—RKK).

(m) Instead of dative, genitive in Nasiketopākhyān, is used as indirect object thus—*apane pitā ke kaun mũha dikhāũgī* (what face would I show to my father).

(n) In the following examples, we have genitive of purpose—*wah uske khāne ke kām kā na thā* (this was no good for his food); *yah wakat thaharane kā nahī hai* (this is no time for staying).

(o) Genitive in Prem Sāgar is employed to express ablative idioms, as, *bṛndaban kā āyā huā* (arrived from Vrindaban); *parvat kā girā wah* (he, fallen from the mountain—PS); the idioms—*janm kā bhikhārī* (beggar from childhood); *man kā kapaṭī* (malicious from or of heart); occurring frequently in Prem Sāgār and Rānī Ketakī kī Kahani can also be treated under this head. Such idioms are regular in the texts taken for study and they have also been inherited by Modern Hindi Prose.

Besides these, the genitive is employed in all the three texts as genitive of material, as *Kañcan ke mandir* (temples of gold), *ek daul cā̃dī kā* (a bucket of silver—RKK), *us ne ghās kī daliyā me putra ko rakh diyā* (she kept her son in the basket of grass—NKP); as genitive of price, e.g., *yah kitane kā ghoḍā hai* (of what value this horse is); as genitive of quality—*bhā̃ti bhā̃ti ke parvat* (varieties of mountain—PS), *baḍe acambhe kī bāt* (an exciting happening—NKP); as genitive of cause, e.g., *path kā hārā* (tired of way), *virah kī pīr kise sunāū̃* (to whom should I relate the pang of separation—PS); as genitive of purpose, e.g., *citra rekhā likhaneh kā sāmān magāya āsan par baiḍhī* (having asked for the writing instruments, Citrarekhā took her seat—PS).

Examples of elliptical genitive is a special feature of all the three texts. In certain cases the genitive post-position is also omitted, e.g., *jeṭh badī teras ko* (on the 13th day of Jeṭha), the regular expression should be *jeṭh kī badī teras ko; kṛṣṇa ko mārnewāla mũh māgā dhan pawega* (slayer of Krishna would get wealth according to his desire—PS.), the regular form

would be *mũh kā mā̃gā.* In these examples the nouns appear as genitively dependent compound.

The genitive post-position is frequently added to a verb and it expresses a substantive unit, e.g., *māro-māro kāṭo-kāto kā sabd phailgayā* (noise of 'strike and slaughter'—spread all over the place—RKK).

The genitive post-position in Prem Sāgar and Nāsiketopākhyān is often employed with the verbs gaye and soye to express adjectival sense, thus, *yā caudah ratna ke gaye kā sok hai, us soye kā khāṭ uṭhā kar yahā̃ rakh* (bring here the bed that sleeping man—RKK).

The compound genitive is a common idiom in all the three texts. The genitive is compounded generally with locative post-position *par* (on). Thus, *parvat ke coṭī par ke barf* (snow from the peak of mountain—), *bhūkhī ā̃khẽ pṛthwi par ke dhan se nahī̃ bharatī̃* (hungry eyes are never satisfied by wealth of universe).

TONES IN PUNJABI[1]

By

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0.0 This paper deals with the tone system of a variety of Punjabi spoken in the city of Amritsar, which is commonly designated as Majhi (referred to herein as Punjabi only). The name Majhi is applied to the dialect of Punjabi spoken in Majha (Midland) which lies between the rivers Ravi and Beas-cum-Satluj and includes the districts of Amritsar, Gurdaspur and Lahore.[2]

The citations herein as based on my own pronunciation and have been supplemented as a check in most of the cases with the pronunciation of the other speakers.[3]

0.1 The existence of tones in Punjabi "had long been a puzzle to the students and speakers of Punjabi till Dr. Grahame BAILEY discovered their true nature viz., that they consisted in altering the pitch of the vowel, technically called tones".[4] But still the only descriptive statements of the tone systems of the various varieties of Punjabi are those contained in the works of Dr. Grahame BAILEY and Dr. Banarsi Das JAIN.[5] The present paper (apart from describing a different variety of Punjabi) differs from the earlier treatment of the subject in the application of the phonemic theory and the conclusions[6] arrived at can be briefly stated as follows:

1. Punjabi has three distinctive tones.
2. The position of tone is significant in a word.

1. I am grateful to Dr. Gordon H. FAIRBANKS and Dr. H. A. GLEASON for having gone through this paper and made many useful suggestions and also to Dr. William O. BRIGHT and Mr. P. C. GANESHSUNDARAM of the Deccan College, Poona, for the valuable help I have received from them.

2. G. A. GRIERSON: *Linguistic Survey of India*, Vol. IX, Part I, Page 651.

3. The two informants with whom I have worked are Smti Bhagwati DEVI (in January-February, 1956) and Shri Kanti Prakash BAHL (August-September, '56). No difference in the speech of these informants has been found pertinent to the tones.

4. B. D. JAIN: *A Phonology of Panjabi and A Ludhiani Phonetic Reader*, Lahore (1934), Page 29.

5. T. Grahame BAILEY: *"A Punjabi Phonetic Reader"*, (1913) based on the speech of village around Wazirabad and Gujranwala and *"Linguistic Studies from the Himalayas,"* (1920) describing the Panjabi of Bilaspur and Nalagarh, B. D. JAIN: ref. *cit. ft. nt.* 4.

6. For difference in conclusions ref. to works *cit. ft. nt.* 5. There is no fourth or combined tone in the variety described by me and this is in fact the tone with the superimposed intonation.

3. The feature of stress is not significant in the language and is an automatic predictable concommitant of tone.

0.2 The Phonemes[7] of Punjabi are as under:

(a) Segmental.

Consonants.	Bilabial	Dental	Retroflex	Palatal	Velar	Glottal.
STOPS						
Vcls.	p	t	ṭ	c	k	
Vcd.	b	d	ḍ	j	g	
Vcls.Asp.	ph	th	ṭh	ch	kh	
CONTINUANTS						
Spirants.		s		š		h
Nasals.	m	n			ŋ	
Lateral.		l				
Flaps.		r	ṛ			
Semi-consonants.	w			y		

Vowels.

Class I /I ə U/

Class II/i e æ a ɔ o u/

(Vowels of the Class I are phonetically short and those of Class II are phonetically long).

(b) Supra-segmental.

1. Nasalisation ~

2. Tones — Even Tone -
Falling Tone ⋗
Rising Tone /

3. Word Juncture. (not written here).

The following limitations on distribution are pertinent to a discussion of tones:

1. All consonants occur initially, medially and finally except;
/ŋ/ does not occur initially, /h/ occurs only initially,

7. Transcription used in this paper is tentatively phonemic and the symbols (with certain modifications) have been used as suggested by B. Bloch and G. L. Trager: *"Outline of Linguistic Analysis"* (1942).

/w/ does not occur finally except in a few proper names and /y/ does not occur finally.

2. Consonant clusters are of four kinds:
   (a) Any consonants followed by a semi-consonant (initially and medially only)
   (b) Any sequence of identical consonants except ŋŋ, yy/ (medially and finally only).[8]
   (c) Certain other sequences of continuants plus stop (medially and finally only).
   (d) Certain sequences of stop plus stop (medially only).

There is the further restriction that no mono-syllabic or disyllabic word can have more than one cluster of classes b, c and d.

3. All vowels contrast in accented syllables except before pause where vowels of the class I do not occur. Vowels of Class I occur as atonic vowels after pause and between consonants and of Class II as atonic vowels before pause.

0.4 The present description of tones is restricted to mono-syllabic and di-syllabic words, the various types of which can be represented by the following formulas:

MONO-SYLLABIC (C) (S) V (C) (C)

DI-SYLLABIC (C) (S) V (C) (C,S) V (C) (C)[9]

1.1 Punjabi has three distinctive tones[10] which can be called Even Tone, Falling Tone and Rising Tone respectively and the following are a few minimal triplets to show the phonemic contrasts:

/bāri/ "window"	/bàri/ "broom"	/bári/ "outside".
/pālla/ "cold"	/pàlla/ "spear"	/pálla/ "proud".
/ṭ ə̄ ɒg/ "hang"	/ṭ ə̀ ɒg/ "manner"	/ṭ ə́ ɒg/ "legg".
/kəṛā/ "straighten"	/kəṛà/ "to get made"	/kəṛá/ "pudding".
/cā/ "wish".	/cà/ "shyness"	/cá/ "tea".
/kāi/ "a kind of reed"	/kài/ "grass-seller"	/kái/ "green matter" (moss).

8. The sequence of identical consonants occurs finally after vowels of the class I only.

9. C. S. and V mean any consonant, semi-consonant and Vowel respectively.

10. For a definition of a tone language see K. L. Pike, *"Tone Languages"* (1948).

2.1 Features of the Even Tone.

The contour of Even Tone starts at a mid level and ends abruptly with a slight rise. It occurs on all types of mono-syllabics and either on the first or on the second syllable of the di-syllabics.

2.2 Features in Mono-Syllabics.

The Even Tone occurs in all types of mono-syllabics with all possible initial and final consonants or clusters and all possible vowels viz., /ā/ "come", /pī/ "drink", /dwā/ "medicine", /chɔ̄k/ "to season a vegetable", /dīl/ "heart", /dāb/ "pressure", /ṭyūb/ "tube", /wyə̄ŋg/ "irony", /swə̄rg/ "heaven", /k^hɔ̄ɭ/ "to boil", and /chīll/ "to peel off", etc.

In the checked mono-syllabics the rise is more distinct than in the unchecked ones as in /pā/ "to put" and /pāp/ "sin". Also different auditory effects in the starting point of the glide can be noted depending on which consonants occur at the beginning of the words. The starting point of the glide is lowest on the syllabics beginning with a voiceless aspirated stops, slightly higher on the syllabics beginning with a voiceless unaspirated stop and higher still on the syllabics beginning with a voiced consonant as in /khāl/ "a game of cards", /kāl/ "death" and /gāl/ "melt".

The glide has the same qualities in mono-syllabics of the type VC having vowels of the Class II as in /āp/ "self" and /āb/ "lustre".

In the types CVC and CVCC having vowels of the Class I only, the rise in the glide is more distinct on the latter as in /mə̄n/ "mind", /mə̄nn/ "agree", /kə̄ɭ/ "machine" and /kə̄ɭ ɭ/ "loneliness", etc.

In the type VCC where only vowels of Class I occur the low-start and the rise of the glide is more distinctly heard on the syllabics checked by voiceless unaspirated stops than those checked by the voiced or voiceless aspirated consonants as in /ə̄kk/ "a plant", /ə̄gg/ "fire" and /ə̄kk^h/ "eye" etc.

In the mono-syllabics of the types CSVC and CSV phonetic realisation of the glide is similar to that of the type CVC (with the vowels of Class II) and CV and the preceding semi-consonant has no effect on the tone glide on the syllabic peak as in /pyās/ "thirst", /pās/ "near" /wyās/ "a name" and /wās/ "abode".

2.3 Features in Di-syllabics.[11]

In the di-syllabics if the tone occurs on the first syllable, it has always a relatively lower pitch of the voice and rise of the glide is realised on the second atonic syllable. Also the first syllable has a slightly greater amount of stress than the second as in /pāna/ "to put", /kəla/ "art", /mūrət/ "picture" and /nwərni/ "newly married."

In case the two syllables are separated by a consonant cluster the amount of breath force increases on the first syllable without having any significant effect on the relative pitches of both the syllables viz., /pānna/ "am putting", /jĪnda/ "living", /chōlle/ "gram", /pyālla/ "cup" and /cʰərra/ "lead-shot".

If the tone occurs on the second syllable, the pitch contour is realised on this syllable. The first atonic vowel has always a low pitch (which is similar to that when the tone occurs on this syllable), but the pitch contour starts at the same level as that of the first atonic vowel and ends abruptly with a slight rise. The vowel bearing the significant tone has always in this case a higher amount of stress than that of the first atonic vowel as in /təlā/ "tank", /dəryā/ "river", /məkān/ "house", /səmyān/ "goods", /kʰərūḍ/ "scratch" and /mUkhtyār/ "attorney".

3.1 Features of the Falling Tone.

Words may have a different tone which may be called Falling Tone (or Falling Rising Tone). The glide of this tone starts at a low level falls down and rises to the mid-level and the pronunciation of words having this tone is also accompanied by a considerable constraint in the larynx. The syllables having falling tone may be pronounced with a creaky voice, especially in a consciously slow pronunciation.

3.2 Features in Mono-Syllabics.

In mono-syllabics the fall and the rise of the glide occurs on the same syllable but the glide is more distinct on the syllables having vowels of Class II than those with the vowels of Class I as in /tìr/ "everyone", /tìr/ "courageous", /tàr/ "to imagine", /tər/ "to place", /tùr/ "farthest" and /tÙr/ "trick". Moreover, the glide seems to start at a low level on the syllables preceded by a voiceless consonant. Instances of all consonants except the voiceless aspirated stops preceding the syllable having falling

11. Various phonetic features of the mono-syllabics after pause and before pause are also found in the di-syllabics in similar environment and have been omitted from description to avoid repetition.

tone are found (except in the one word /khẹ̀d/ "to play") as in /pæ̀/ "fear", /pùs/ "ugly", /dàṛ/ "to roar", /tŪn/ "note of music", /cə̀ss/ "habit", /kə̀ṛṛ/ "creaking sound", /lyɔ̀n/ "bringing", /kŪnd/ "veil over the face", /ràt/ "night".

In the mono-syllabics of the types CSV, CSVC and CSVCC the glide is realised on the syllabic peak only and the semi-consonant has no effect on it viz., /tyà/ "to meditate", /lwàr/ "black-smith", /pyàs/~ /byàs/ "practice", /pwà/ "turn round" and /nyə̀ŋg/ "name of a religious sect".

In the mono-syllabics with the vowels of Class II the fall of the glide is more distinct than on the mono-syllabics with the vowels of Class I, similarly it is more distinct on the mono-syllabics of type CVCC than on the type CVC (both having vowels of Class I) viz., /pìṛ/ "to attack", /pìṛ/ "crowd", /pùr/ "drizzels", /pŪr/ "to crumble" /ṭə̀l/ "to melt" and /ṭə̀ll/ "ugly man".

3.3. Features in Di-syllabics.

When the tone occurs on the first syllable, the fall and the rise of the glide occurs on the same syllable (except when followed by a consonant cluster, a semi-consonant or on the first vowel of the sequence of two vowels) and the second syllable usually continues on the same level of pitch as the end point of the glide on the first. In this case the first syllable has always slightly higher amount of stress than the second atonic vowel viz., /nèra/ "dark", /kòṛa/ "horse", /tyàrãc/ "in the festivals" etc.

If the two syllables are separated by a consonant cluster or a semi-consonant, or they occur in a sequence of two vowels, the fall of the glide occurs on the first syllable but the rise in the pitch is not completely realised on this syllable, but is continued also to the second atonic vowel viz., /bànna/ "excuse", /tàwa/ "attach", /cìmni/ "eye-lash", /mìnna/ "month", /pùa/ "aunt", /pwài/ "turned round", and /pɔ̀jjəl/ "confusion" etc.

If the tone occurs on the second syllable, the first atonic vowel always has a low pitch but the fall and rise of the glide occurs on the second syllable only. In this case the syllable bearing tone has a higher amount of stress than the atonic vowel as in /bənà/ "get packed", /kəbrà/ "to be perplexed", /cərəmm/ "burden", /wəglàṭ/ "countenance.

The first syllable of the di-syllabics beginning with the consonant /h/ and having tone on the second syllable, may be dropped out from the pronunciation and the words may thus become mono-syllabics viz., /həlà/ >

/là/ "stir", /həwà/ > /wà/ "air", Similarly the tri-syllabics may also become di-syllabics as /həlwài/ > /lwài/ "sweats-seller".

In all di-syllabics the semi-consonant preceding a syllabic bearing tone, does not effect the realisation of the tone glide.

4.1. Features of the Rising Tone.

Words may have a third kind of tone which starts at about mid-level, rises high and falls down on the same syllable on which it occurs. According to the characteristics of this glide it may be called rising-falling tone or simply rising tone. This tone may also occur either on the first or on the second syllable of the di-syllabics.

4.2. Features in Mono-syllabics.

The rising tone may occur on words beginning with any consonant. The rise on the syllables preceded by a voiceless consonant is not so sharp as on the one with a voiced consonant. It occurs on all the possible vowels, combinations of the consonants and semi-consonants etc. viz., /ǽ/ "this", /ó/ "that", /ár/ "business", /sɪ́r/ "head", /šé/ "undue encouragement", /rú/ "essence", /bód/ "enlightenment", /swá/ "ash", /jwár/ "jewel", /khól/ "open", /mǽl/ "palace", and /bʊ́dd/ "wisdom", etc.

In checked mono-syllabics, slight variation in the end point of the glide is heard, depending on the occurrence of a voiceless or voiced consonant. The fall on syllable checked by voiceless consonant is more distinct than the syllables checked by voiced consonants as in /kɔ́s/ "please say him", /wyán/ "about to marry".

The fall of the glide is always greater on the unchecked syllables than on the checked syllables viz., /gá/ "to roam about", and /gák/ "customer". The rise of the glide is more distinct on the mono-syllabics having vowels of the Class II than those of the Class I as in /cáṛ/ "to cook", /cə́ṛ/ "to climb", /gúṛ/ "difficult to understand", /gʊ́ṛ/ "to become able", /cíṛ/ "a kind of wood" and /cɪ́ṛ/ "to be irritated". It is also more distinct on the mono-syllabics of the type CVCC than on the type CVC (both having vowels of the Class I) as in /khɪ́j/ "to be annoyed", /mɪ́jj/ "suppression", /mə́g/ "a kind of herb" and /mə́gg/ "sky-light".

4.3. Features in Di-Syllabics.

In the di-syllabics the tone may either occur on the first syllable or on the second syllable and in each case stress is an automatic accompaniment of the tone. If the tone occurs on the first syllable, the rise and the fall

of the glide occurs on that syllable, but the pitch of the following syllable is in level with the end point of the glide on the first as in /kála/ "hasty", /mála/ "garland", /ḍyóṛi/ "entrance to the house", /jǽmət/ "trouble", /sĩra/ "end-point" etc.

If the tone occurs on the second syllable the rise and the fall of the glide occurs on that very syllable, but the pitch of the atonic vowel is in level with the starting point of the glide. Also the fall on the unchecked syllable is more distinct than on the checked ones as in /məlá/ "sailor", /məlés/ "a kinship term", /tənkhá/ "salary" and /kUrláṭ/ "grumbles".

In case the tone occurs on the first syllable and there is a consonant cluster or semi-consonant between the syllables, or there is a sequence of two vowels, the fall of the pitch starts on the first syllable and is completely realised on the second atonic syllable viz., /bɔ́kkər/ "broom", /jĩdder/ "any where", /dáwa/ "law-suit", /dáya/ "a unit of ten", /réa/ "lived", /rúõ/ "from the mind".

In the di-syllabics beginning with consonant /h/ but having tone on the second syllable, the first syllable is dropped out of the pronunciation or may sometimes be completely inaudible as in /həwáṛ/ > [hwáṛ] /həwáṛ/ ~ /wáṛ/ "smell", /həlwán/ > /lwán/ "red dye". Similarly the tri-syllabics may become di-syllabics with the drop of the first atonic syllabic as in /həlwánni/ > /lwánni/ "of the red colour".

The semi-consonant preceding a syllabic bearing rising tone, does not effect the phonetic nature of the pitch glide either in the mono-syllabics or in the di-syllabics.

5.1. The Position of Tone is Significant in a Word.

From the above discussion it is evident that there is a three way tone contrast on the mono-syllabics and on the di-syllabics, there is a three way contrast either on the first or on the second syllables of the words. Phonetically the contour on CVC is equivalent to the contour on both the syllables of the type CVCV as in /kāl/ "death, /kāla/ "black", /kàl/ "to struggle", /kàla/ "confusion", /kál/ "haste" and /kála/ "hasty".

In the case of the three way contrast on the first syllable, the second syllable of the di-syllabics is atonic. Similarly the first syllable of the di-syllabics which have significant contrast on the second syllable, is atonic.

On the basis of this three way contrast on the mono-syllabics which is phonemically equivalent to the three way contrasts either on the first or on the second syllable of the di-syllabics, we can say that the position of the

tone is significant in the language and that each pholonogical word has only one lexically significant and contrastive tone which can occur on any one of the syllables and the position of the tonemically significant syllable in the word is distinct from the atonic syllable (in the di-syllabics).[12]

6.1. Stress Automatic on Syllables Bearing Pitch.

In the di-syllabics there is phonetic evidence for the occurrance of stress[13] along with the tones which can be shown as under =

$C\ {}_1\bar{V}\ C\ V$	$C\ V\ C\ {}_1\bar{V}$
$C\ {}_1\grave{V}\ C\ V$	$C\ V\ C\ {}_1\grave{V}$
$C\ {}_1\acute{V}\ C\ V$	$C\ V\ C\ {}_1\acute{V}$

There is no evidence in the language to show (a) that stress has any phonemic significance distinct from the tones[14] and (b) it alone is significant in the language because :—

(a) in the mono-syllabics there is a regular three way contrast in tones and the stress cannot even be phonetically split apart from the tones,

(b) in di-syllabics no contrasts of the types $C\ {}_1\bar{V} C\ V - C\ {}_1V\ C\ \bar{V}$ or $C\ {}_1\bar{V}\ C\ V - C\ \bar{V}\ C\ {}_1V$ exist in the language, and

(c) there is either a three way contrast on the first syllable or on the second syllable only.

Stress, therefore, is an automatic predictable concommitant of tone and hence of no phonemic significance. Previous statements[15] that stress distinguishes pairs of otherwise identical words are the result of inadequate analysis of tone and the phonemic interpretation of the atonic vowels.

12. For differences refer BAILEY: *Punjabi Phonetic Reader, Page, XV.* His statement "When several syllables normally having the same kind of tone come together, it is customary in rapid conversation to pronounce the tone only in the most strongly stressed syllables", is suggestive but quite ambiguous.

13. The mark 1 before V means the phonetic stress.

14. All pairs as listed by JAIN (Page 166) except śUta "attention" and sU'ta 'cause to be drawn out" are found in the variety of Punjabi described in this paper.

15. Refer JAIN *c.f.* 14 above.

LUSHAI PHONEMICS

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0. Introduction
1. Consonants
2. Vowels
3. Tones
4. Syllable Structure
5. Orthography

0. In the course of collecting a short vocabulary list of Lushai, a Tibeto-Burman language of Assam, I made a preliminary phonemic analysis.[1] Though this is surely not the final word on Lushai, it does include an analysis of certain features that have been completely neglected in earlier discussions of the language. I present my analysis here then, as a contribution toward the fuller understanding of the Lushai phonemic system, not as a definitive discussion. Further work may very well modify some of the results reported here.

According to my analysis Lushai can be described as having 23 consonantal phonemes and 5 basic vowels. Each vowel may occur either long or short and there are a large number of diphthongs. There are also 4 tones, each syllable carrying one or another of the four.

1. *Consonants*:

The consonants may be diagrammed as follows:

	labial	dental	cacuminal	velar	glottal
stops	p, p′, b	t, t′, d	ṭ, ṭ′	k, k′	?
fricatives- & spirants	f, v	s, z		(h, position varies)	
nasals	m	n		ŋ	
affricates		č, č′			
flap		r			
lateral		l			

1. My trip to Assam was made possible by a Research Fellowship from the Ford Foundation of New York. All the information reported here was obtained from a single informant, Shri Lal Thanhawla SAILO, of Aijal, Mizo Hills, but a temporary resident at that time in Tura, Garo Hills.

/p/ A bilabial stop, voiceless but unaspirated, approximately like the "p" in "spit." /pe̱/ "give"; /pa̱ŋ-pā:r/ "flower"; /mēī: va̱:p/ "ashes".

/p'/ A stop made in the same position as /p/ and like it unvoiced, but with an aspirate, like the "p" in "pit". It contrasts with /p/.

/b/ A voiced bilabial stop, contrasting with both /p/ and /p'/ but made with the same lip position. /ba̱:l/ "dirty"; /bēŋ/ "ear".

/t/ A dental stop, unaspirated and unvoiced. Like the "t" of "stop" it has no aspiration, but it is pronounced well forward of the English "t" position, more like the French "t". /po̱t/ "pull; /tu̱i/ "water"; /te̱:/ "small".

/t'/ An aspirated voiceless stop in the same tongue position as /t/. /t'i̱n/ "tree"; /t'a̱u/ "grease".

/d/ A voiced dental stop, in the same position as /t/. /dīn/ "stand"; /di̱:l/ "lake"; /dūm/ "black".

/ṭ/ An unvoiced unaspirated cacuminal stop. To an English speaking person this sounds very much like /t/, but it is made with the tongue rolled well back and articulating against the hard palate.

/ṭo̱i?/ "rotten"; /ṭō:n/ "tie".

/ṭ'/ An aspirated unvoiced, cacuminal stop, made in the same articulatory position as /ṭ/.

/ṭ'ūī/ "sew"; /ṭ'a̱/ "good".

Comparison with the bilabial and dental position would lead one to expect a voiced cacuminal stop as well, but such does not seem to exist in Lushai.

/k/ A voiceless non-aspirated velar stop, much like the English "k" in "sky". /t'lo̱:k/ "fly"; /ka̱n/ "we".

/k'/ A voiceless aspirated velar stop, much like the English "k" in "key", but contrasting with /k/. /k'a̱/ "that"; /k'àl/ "congeal".

Like the cacuminal series, the velar series does not include a voiced member.

/?/ The glottal stop. This occurs only as syllable or word final, and follows only short vowels. /se̱?/ "bite"; /hu̱?/ "wet"; //č'a̱?/ "thick".

/f/ A labio-dental unvoiced fricative, very much like English "f".

/v/ A labio-dental voiced fricative, very much like English "v". /vo̱m/ "throw"; /vā:r/ "white".

Comparison with the stop series would lead one to expect that a distinction might be made between aspirated and unaspirated voiceless fricatives, but such does not seem to be the case.

/s/ A voiceless groove spirant, intermediate in position between the "s" in "sh" of English. /sa̱m/ "hair"; /sa̱/ "meat".

/z/ A voiced groove spirant, in the same position as /s/, and thus intermediate between English "z" and "zh" of "zoo" and "measure".

/zī:m/ "narrow"; /zo̱ŋ-zòŋ/ "all".

/m/ A bilabial nasal, like the "m" in English "man".

/pu̱m/ "belly"; /me̱i/ "tail"; /mā:m/ "smooth".

/n/ A dental nasal, made with the same position as /t/, which is to say with the tongue slightly forward of the usual English "n" position.

/pān/ "thin"; /t'i̱n/ "liver"; /ne̱:n/ "along with"; /na̱m/ "push".

I was unable to find instances of a nasal cacuminal, to correspond with the cacuminal stop series.

/ŋ/ A velar nasal like the "ng" in English "sing". Unlike the English "ng", however, this phoneme may occur initially as well as finally.

/ṭlā:ŋ/ "mountain"; /ŋī:l/ "straight"; /ŋaì?-tu̱a?/ "think".

/č/ An alveolar unaspirated affricate, a little forward of the position of the "ch" in English "chair", but not so far forward as "ts" of "hats". It is in the same position as /s/. /čū:l/ "rub by hand"; /či̱:/ "salt".

/č'/ An aspirated alveolar affricate, made in the same position as /č/, but with aspiration. /č'u̱:m/ "cloud"; /č'ē:m/ "below". Again there seems to be no voiced affricate in Lushai.

/r/ An alveolar flap, or very brief roll made with the tip of the tongue. A good deal of breathy friction made by air passing the tongue tip accompanies this sound. /t'ār/ "new"; /rī:l/ "intestines"; /rū:l/ "snake".

/l/ A voiced lateral, made with the tongue well forward against the teeth, as in French. /la̱i/ "dig"; /lū:/ "head".

/h/ This phoneme occurs only as syllable initial, and it assumes in every case the phonetic shape of the following phoneme, except that it is unvoiced. When it precedes a vowel, it is much like the English "h", an unvoiced precursor of the later voiced vowel. It may also occur before /m/, /n/ /ŋ/, in each case being an unvoiced nasal of the type which follows it. Similarly

it may precede /l/ and /r/ as unvoiced versions of these two phonemes. (See below under clusters).

/hēr/ "turn"; /hiạt/ "scratch".

2. *Vowels*:

There are five primary vowel positions in Lushai, which are themselves quite simple, but each of them may be either long or short (and there is some slight accompanying change of position) and a number of diphthongal and triphthongal combinations are possible. I found the distinction between long and short vowels to be one of the most difficult aspects of the language, and I feel that my findings are most questionable at this point. I will discuss each of the Lushai vowels and explain so far as possible the difference between the long and short versions. After that, I will discuss dipthongs and triphthongs.

/a/ The long vowel /a:/ is pronounced in the low central position at about the location of the "a" in English "father". The short vowel /a/ besides being shorter in time, is pronounced higher, almost though not quite as high as the neutral [ə] in English, or the short "a" of Hindi. The difference between these two is the greatest of any of the long-short pairs. Before /?/, /a/ is always short (as are all other vowels before /?/), but the /a/ is also pronounced low, in the usual position of /a:/ rather than higher in the usual position of short /a/. It is perhaps arbitrary whether these vowels before /?/ should be assigned to the long or to the short phoneme, but if temporal length is taken as the most important criterion, then they are surely to be considered short.

/č'ạ?/ "thick"; /ṭ'ạ:/ "good"; /kà/ "I"; /kā:/ "mouth"; /ār-sị/ "star"; /zạ:n/ "night".

/e/ Both long and short varieties of this vowel are pronounced very slightly lower than the "e" of English "bet", a little bit in the direction of the vowel in "hand". If anything, the long version is pronounced slightly lower than the short one, but the difference is not great. They are front unrounded vowels.

/čè/ "you" (objective case); /č'ē:m/ "blow"; /t'ī-sēn/ "blood" /pẹ/ "give"; /tḗ:/ "small"; /lẹ?/ "and".

/i/ A high front unrounded vowel, higher than English "i" in "bit", but not diphthongized like the vowel in "beat". When long /i:/, this tends to be pronounced slightly higher than when short /i/.

/hṇi:m/ "smell"; /hnìm/ grass"; /t'ī:/ "die"; /čīl/ "saliva" /čị:/ "salt"; /ī/ "thou".

/o/ A back mid, or low mid vowel slightly above the position of the first vowel in English "ought", but closer to that vowel than to the vowel in French "beau". It is barely rounded. Whether long or short, it is made in much the same positions, but the length difference is quite distinct.

/họ:ŋ/ "bark of tree"; /t'ọ/ "breathe"; /vọt/ "cold";
/sö:-tạ?/ "there—'far'"; /sō-tạ?/ "there—'not so far'".

/u/ A high back vowel, which gives an acoustic impression of a sound intermediate between English "foot" and "boot", but is almost completely unrounded. Long and short versions are pronounced in the same position.

/č'ụn/ "stab"; /č'ụ:n/'day"; /čù/ "is"; /nù:/ "mother"; /rụ?/ "bone."

The distinction between short and long vowels tends to be fairly clear and unambiguous when they are followed by a consonant. However, when they occur in open syllables, the difficulty is considerably greater.

J. Herbert Lorrain, in his discussion of Lushai orthography in the preface to his "Dictionary of the Lushai Language" said that the circumflex (the conventional indication of vowel length) is often omitted from the a, i, and u, when these occur at the end of a syllable.[2] This could mean that only one variety occurs at the end of a syllable, or it could mean that the orthography is imperfect. I felt, however, that in each case there were variations among the final vowels, which would have to be called differences in length, though in some cases the great preponderance of words had one length, while I could only discover a very few of a different length to contrast with the others. For instance, the word for "I" /kà/ ends in a shorter and higher vowel than other words ending in /a/, such as /kā:/ "mouth". For this reason I analysed most final a's as long, though in the conventional orthography no distinction is made. The whole question of length is a vexing one, and its final analysis will require considerably more work.

Diphthongs: A number of combinations of vowels occur, which are diphthongs in being monosyllabic, and in taking only one tone as a cluster. The diphthongs I have encountered, and there may very well be others are: a:u, ạu, a:i, ại, eu, ei:; eị, ia:, iạ; ọi; o:i; ou; ua:; uạ; ui; and the triphthongs iạu, and uai. The vowel sequences here are quite simple, but the strict

2. Lorrain, J. H. *Dictionary of the Lushai Language*, Royal Asiatic Society of Bengal, 1940.

determination of which of them are long and which are short would have required a good deal more investigation than I had time for. I am certain, however, that some variations of length can cause phonemic contrasts. For instance, /zā:ī/ "sing" contrasts with /zạī/ "to cut". However, whether either or both members of the diphthong may be long, or whether the whole diphthong as a unit is to be considered long, I do not know. Because of this, I have simply not indicated length when I do not know it, and only those vowels marked with the subscribed dot are at all reliably short. Where I discovered some sort of contrast between words, or where a vowel sounds particularly long or short, I have so indicated them, but not all are reliable. I feel most confident of those involving long and short a's, and most of these are marked.

3. *Tones:*

Surely the most interesting thing about the phonetics of the Lushai language is the tonal system. Unfortunately earlier studies of Lushai seem to ignore the tones completely, even though the simple fact of their presence at least is quite obvious, and a great many words are distinguished from each other only by differences in tone. Even LORRAIN, in his dictionary, which on the whole is a very impressive piece of work, makes no mention whatsoever of the existence of tones, and the orthography conventionally used does not indicate them. I have been told that foreigners seldom use the tones correctly, but are still understood, and apparently their absence in the writing does not lead to confusion. Still they are a very fundamental part of the spoken language.

According to my analysis, there are four tones in Lushai, each vowel or vowel cluster (or alternatively each syllable) carrying by necessity one or the other of these four tones. They can be conveniently and accurately labeled as 1) high level (marked as /ā/); 2) high falling (marked as /à/); 3) low level (marked as /a̱/); and 4) low falling (marked /a̖/). The level tones are considerably more resonant than the falling tones, and have a mildly sung quality, while the falling tones approximate more closely the quality of ordinary speech in English, without much resonance. The low falling tone sounds about like the "yes" of finality as "yes, I will do that." The high falling tone is more like a "yes" which expects more to be said, as a person may say repeatedly "yes" when listening to the telephone, but it is not at all "questioning." That is, it is definitely a falling tone, though it starts and ends higher than the low falling tone. The falling tones start at about the same level as is held constant in the level tones, but go lower in each case. This gives the low falling tone the quality of being the lowest of them all. The level tones maintain a very even pitch. There is never any rising quality to any of them. There are numerous

examples of minimal pairs, where the only difference is pronunciation is that of tone:

/īn/ "drink" vs. /i̱n/ "house"; /č̆a̱:ŋ/ "to watch for" vs. /č̆ā:ŋ/ "joint"; /č̆a̱ŋ/ "to share with" vs. /č̆āŋ/ "tail feather"; /č̆'a̱ŋ/ "bread"; /č̆'āŋ/ "younger sibling"; /kāl/ "walk" vs. /k'àl/ "congeal, stiffen".

The complication of the tones is considerably augmented by several factors. For one thing, a beginner may confuse differences in tone from differences in length. In a few cases the pitch varies slightly depending upon the following consonant. For instance, and this is the most notable case, the low falling tone, particularly when it accompanies a short vowel, is pronounced slightly lower when it precedes n, l, m, or is final in the syllable, than when it precedes t, or ?. Another factor which can cause confusion is that the tone differences are entirely relative, and in asking an informant a list of words, one must make sure that he continues the same point of reference. After a slight pause my informant sometimes shifted considerably, every bit as much as the difference between tones, and I had to reorient myself each time to follow him. Furthermore, emphasis may raise the tone a bit, so that a low tone can get confused with a high one, if the informant tries to emphasise to make the pronunciation clearer. I tried for a bit to check the tones in sentences, but this did not prove very successful, and the same words seemed to shift tone considerably according to context. For instance, the final syllable in a sentence or utterance seems to have the tone dropped a bit, and I felt that the first one was likely to have the tone slightly raised. However, these are problems which I did not pursue very far, and the tone values which I have given in this paper are those found in isolated syllables. The shift in tone according to context means that the problem of analysing multisyllable words is considerably greater than that of single syllable words. I feel quite confident of having adequately analysed the single syllable words, but I have unanswered questions about longer ones.

4. *Syllable Structure:*

Although Lushai has polysyllabic words, phonetically the syllable is very fundamental.. Not only does each syllable carry a tone, but certain consonants and consonant clusters have limited distribution, some occurring only as syllable initial and others only as syllable final. All single consonants may occur as syllable initial except for the glottal stop. Finally, however, only /r/, /l̥/, /?/, the nasals /m/, /n/, and /ŋ/ and one set of stops occur. The final stops, being unaspirated and unvoiced, are most reasonably grouped as members of the phonemes which initially are written /p/, /t/, /ṭ/, and /k/, though in the final position these do not contrast with

the aspirated or with voiced stops. The following initial clusters are the most important: hm, hn, hŋ, hl, hr, and tl, and t'l. In the latter two cases the /l/ is only vaguely voiced. Finally /l?/ occurs. There may be a few other clusters, though they do not form a very important feature of the language.

/t'l̥a̱/ "wing"; /t'l̥ī:/ "wind"; /tlē:m/ "few"; /tla̱:/ "fall"; /hme̱i-č'ia̱/ "woman"; /hme̱t/ "squeeze"; /hne̱/ "suck"; /hna̱?/ "leaf"; /hŋō:ŋ/ "neck"; /hru̱/ "wipe"; /hrīŋ/ "green"; /hle̱u?/ "swim"; /hlā:/ "far"; /a̱l?/ "burn".

5. *Orthography:*

So far I have only incidentally mentioned the traditional orthography of Lushai, confining myself to the symbols which I have applied to the phonemes as I have analysed them. For the sake of those who may be doing further work on Lushai, it may be useful to relate my symbols to those used more conventionally, however. The conventional orthography of the consonants is very adequate. Where my symbols differ, it is only to conform to more usual linguistic work. I have used ' to refer to aspiration, while conventional Lushai uses "h". The subscribed period is used to show cacuminal t, as in the common transliteration of the Indic languages, and I have followed that. Where I have used "č" and "ŋ", conventional spelling uses the digraphs "ch" and "ng". One apparent error in the usual orthography is the use of "ngh", as a cluster instead of "hng" (which I have written "hŋ"). This cluster is clearly of the same nature as the "hm", and "hn" clusters, and though these latter are conventionally written with the "h" first, just as I have transcribed them, the "h" is written following "ng". Ordinary writing also uses "h" for the glottal stop, which causes very little confusion since the glottal stop occurs only as syllable final, and the "h" only initially. However, the two are phonetically quite distinct.

Long vowels are indicated by the superscribed circumflex, the short vowels remaining unmarked. Vowels not followed by consonants are, however, frequently left unmarked, but there is very serious doubt whether the length of vowels in this position has been adequately analysed. The vowel which I have written /o/ is conventionally written as "aw". This is, however, a simple vowel, and not a diphthong, and it seems phonetically more accurate to use a single symbol, though the "aw" is at least unambiguous. The symbol "o", on the other hand, is conventionally used for the diphthong that I have marked as /ou/, and is much like the vowel in English "boat." As I have pointed out, tone is completely unmarked in conventional Lushai writing.

VERBAL PREFIXES IN BANGRU

By

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A perusal of the verbal forms of Bangru reveals that it makes use of certain prefixes to elaborate or modify the meanings of a root. We have such pairs as

sərahṇa	'to praise'
bysrahṇa	'to deprecate'
bhaḷna	'to examine, see'
sə̃bhaḷna	'to take charge of'

Still longer series is also available. We have

gəḷna	'to putrify'
nỹgəḷna	'to swallow'
pỹghəḷna	'to melt'
ʉgəḷna	'to vomit out'
ɔggəḷna	'(of crops) not to bear fruit because of too much water

and also

tyrṇa	'to go across, swim'
nytyrṇa	'(of liquids) to settle down'
uttərṇa	'to get down'
nystərṇa	'to behave in an unbecoming manner'

Obviously in the above instances by, sə̃, ny, pỹ, ɔ, etc., are prefixes that are added to the root and these bring about a change in its meanings. Bangru makes use of the following prefixes. These are given below with their allomorphs. These do not have any fixed meaning. The force and centre of meaning varies as if with different verbal roots. However some sort of general meanings can be ascribed to them.

1. a ~ ə	'all round'
2. u ~ ʉ	'out, intensity'
3. o ~ ɔ	'completely, down'
4. ny ~ ni	'much, well'
5. nys	'beneath, improper'

6.	p ~ ph	'out, thoroughly'
7.	pər	'away'
8.	py	'intensity'
9.	by ~ bi	'reverseto, apart, intensity'
10.	bhi	'against'
11.	sə̃	'fully'

A few examples of the use of each of these prefixes may be cited below.

1. a- apphərṇa 'to become flatulent'
   bipphərṇa 'to take airs'

2. u — ʉ

bəḷna	'to burn'	ubbəḷna	'to boil'
ləḷna	'to do one's utmost'	ulləḷna	'to tilt over'
jəḷna	'to burn'	ujjəḷna	'to become bright or distinct'
pəṛna	'to fall'	uppeəṛna	'to scald'
dhʉnṇa	'to card'	ʉdhənṇa	'to annoy, bother'
kəsṇa	'to tighten'	ukkəsṇa	'to raise one's self a little'

3. ɔ ~ o

sərṇa	'to trickle'	ossərṇa	'(of clouds) to spread all round'
sənṇa	'to be smeared'	ossənṇa	'to knead'
gəḷna	'to putrify'	ɔggəḷna	'(of crops) not to bear fruits because too much water'

4. ny ~ ni

bahṇa	'to conduct'	nỹbahṇa	'to pull on'
tyrṇa	'to go across'	nytyrṇa nytərṇa nittərṇa	'(of liquids) to settle down'
ʉpəjṇa	'to grow'	nypəjṇa	'to grow'
pəkharṇa	'to wash'	nykharṇa	'to wash clean'
	'to move, to trickle'	nysərṇa	'to trickle'

5. nys			
tyrṇa	'to go across'	nyst^{ə}rṇa	'to behave in an unbecoming manner'
6. p^ə ~ ph			
sarṇa	'to suffice'	p^{ə}sarṇa	'to stretch out'
		p^{ə}kharṇa	'to wash clean'
lãghṇa	'to cross'	ph^{ə}lãgṇa	'to jump across'
7. p^{ə}r-			
bahṇa	'to conduct'	p^{ə}rbahṇa	'to throw the bones and ashes of the dead in the Ganges or in any other sacred stream or pond'
8. py-			
g^{ə}ḷna	'to putrify'	pỹgh^{ə}ḷna	'to melt'
ch^{ə}ṛna	'to tread over'	pych^{ə}ṛna	'to be left behind'
			'to lag behind'
chodṇa	'to forsake'	pychoṛna	'to winnow'
9. by-			
kyrṇa	'to drop down of its own accord'	bykh^{ə}rṇa	'to be scattered'
chaṇa	'to pervade'	bychaṇa	'to spread all round'
ryraṇa	'to lament'	byrṛaṇa	'to lament piteously'
c^{ə}laṇa	'to move'	bychlaṇa	'to confound'
c^{ə}rṇa	'to graze'	byc^{ə}rṇa	'to move about'
		bycarṇa	'to think over'
r^{ə}cṇa	'to prepare'	byr^{ə}cṇa	'to be obstinate'
10. bhi-			
^{ə}ṛna	'to take a stand'	bhyṛna	'to take a stand against someone'
11. s^ə ~ s$^{\tilde{ə}}$			
g^{ə}vaṇa	'to lose, waste'	s$^{\tilde{ə}}$gvaṇa	'to collect together'
taṇa	'to heat'	s$^{\tilde{ə}}$maṇa	'to torment'
		s$^{\tilde{ə}}$taṇa	'to contain'

We have also the prefixes sət-, pʉ, phʉ, dʉt, pʉc in the following verbal forms:

sətkarṇa	'to show respect'
pʉkarṇa	'to call'
phʉkarṇa phʉkaṛṇa	} 'to produce a hissing sound'
dʉtkarṇa	'to spurn away'
pʉckaṃṇa	'to cajole, pacify a weeping child'

From the above examples it is clear that these prefixes are closely knit with the root. Nothing can be interposed between the prefix and the root. A root may be a free morpheme as in s ə̃-bhaḷna or a bound one as in ap-phərṇa.

As Bangru is a descendant of 1A family these prefixes are the historically developed forms of the upasargas very much in use in the older speech. However, here these have become an integral and inseparable part of the root. We can set up the following correspondence between the Bangru and the Sanskrit prefixes.

Bangru	Sanskrit	Bangru	Sanskrit
a ~ ə	a	p ~ ph	prə-
		pər	
u ~ ʉ	ud-, ut-	py	əpɪ-
ɔ ~ o	əvə-	by ~ bi	vɪ-
ny ~ ni	nɪ-, nɪr-	bhi	əbhɪ-
nys	nɪs-	s ə̃	səm-

It is evident from the above table that Bangru does not have a prefix that is not there in the older speech. Similarly most of the verbal roots that admit these prefixes can be traced back to their historical origin. e.g. gəḷṇa, Jəḷna, dhʉnṇa are derived from the Sanskrit roots gəl-, Jvəl- and dhū.

Next we have a class of verbal forms such as byaṇa 'to give birth to'; bysərṇa 'to forget'; byahṇa : to marry'; aṇa 'to come' which cannot be split into two or more elements on the evidence from synchronic data. Are these, then, constituted of single morphemes unanalysable any further ? But a student of the dialect will be tempted to interpret the first segment, namely by-, a- etc. as a prefix, simply because it is so elsewhere. But how to treat the second element ? It is not found anywhere else in the dialect. Obviously we have no grounds to break the form into two elements. However if we choose to go into the history of the words we find that Jaṇa 'to give birth to' and byaṇa 'to give birth to' are evolved from the same Sanskrit root Jən-

'to be born'. In the course of historical development the two words have come to assume phonetically dissimilar forms. Thus by—in byaṇa historically is the same element as it is in many other forms i.e. a prefix. But now it has become as an integral part of the root. aṇa 'to come' Jaṇa 'to go' (both from ya—to go) sumərṇa 'to remember'; bysərṇa 'to forget' (from smṛ 'to remember') bahṇa 'to conduct', byahṇa 'to marry' (from vəh- 'to carry') have the same story to unfold. nycoṛna 'to rinse' from nɪ-šcut-; byrajṇa from vɪ-raj; bydhəkṇa 'to shy' from vɪ-dəkṣ 'to go' have a more transparent history.

And yet there is another class of verbs such as ukṇa 'to miss' (from ut-krəm) sohrṇa 'to gather together' (from sem-a-hṛ) pɔsṇa '(of milk) to ooze from udders' (from prə-sru) nyɔṛhna 'to stoop' (from nɪ-əvə-dhṛ) where the two elements, the prefix and the root, are so fused together that we can only make a guess.

It may be observed in the end that these prefixes do not have the productive force of a living affix as they once had in the older speech. Their use is restricted to the forms that have come down historically and is not extended to new roots. In other words these verbal forms are historical survivals and the prefixes used therein are no longer living ones.

ONOMATOPOETIC AND ECHO-WORDS IN KAMRUPI

By

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§ 1. In the development of languages linguists have put forward many theories. Amongst them the Bow-wow or onomatopoetic theory supposes that objects are named after the sounds they produce. Thus "*cuckoo* in English, or *miaou* in Chinese, are clearly the sounds produced by the animals."[1] In Hindi cat is called *myāu* as it makes sounds like *myāu-myāu*. Similarly the horn of a motor car is called *bhõpū* as it produces a sound põ-põ.[2] In Kamrupi the cat is called mɛ̃u, *mɛukri* or *maekri*. The Kamrupi word for a musk rat is *sikā̃*, which seems to come from its sound sik-sik. Similarly the words *sɛk-sɛikā*, a kind of bird, or *hudu*, a kind of bird, seem to be onomatopoetic in origin. It is also to be noted that in calling or driving away different animals some onomatopoetic words are used differently. For example *kur-kur* is used for calling the puppies. The word for dog is *kukur*. *Oh-oh* is used for calling the dogs. In this way *hor-hor* and *suh-suh* are used to drive away cows and goats respectively.

Apart from these there are a large number of expressions used in day-to-day speech in which sound and sense are united 'in a marriage-union'. These words present before us such a picture which no equivalent word can do. They may be used as a verb, adverb, noun or as an adjective. With the addition of the suffixes-ā, -nā or-iā, the adjectival sense is indicated. With -i and -ɛni the sense of a noun is implied. With -ɛ adverbial sense is indicated. With the verbal affixes the expressions may be used as verbs. For example:

kin-kin-ā boihrān 'a mild shower'.
khɛŋ-khɛŋ-iā > khɛŋ-khɛiŋā 'peevish'.
sāp-sip-nā pāni 'very shallow level of water'.
dhar-phar-i > dhar-phọri 'struggling in agony of mind or body'.
pir-pir-ɛni > pir-pirɛni 'a slight tickling sensation'.
kɛŋ-kɛŋ-ɛ nāthkibi 'do not be annoying like barking of a dog'.

1. *Elements of the Science of Language*—by Dr. TARAPOREWALA.
2. *Sāmānya Bhāṣā Vijñān*—by Dr. B. R. SAKSENA.

Xi mok khɛs-khɛs-ābā dhoissi 'he has begun to annoy me' (by repeatedly asking something).
biz-bizoi 'gives itching sensation'.

§ 2. These onomatopoetic words also carry different sets of meaning:

(i) the nature of an object, e.g.

phir-phirā kāpur	'thin cloth'.
mɛt-mɛitā bhār	'a heavy load'.

(ii) the nature of a colour, e.g.

tik-tikā rāŋā	'very red'.
kis-kisā kalā	'very black'.

(iii) the different kinds of physical indisposition, e.g.

tiŋ-tiŋ-i	'feeling of headache'
sɛk-sɛki	'the burning sensation of a wound'.
xur-xuri	'the itching sensation of the nose'.

(iv) lonliness, thickness etc., e.g.

xɛŋ-xɛiŋā	'lonely'
ghit-mitā āndhār	'thick darkness'.

§ 3. The onomatopoetic words are formed in two ways. In one (A) the first element is repeated and in the second (B) in the second part the first consonant is changed. But the change of the consonant is not predictable as in the case of the echo-words (cf. § 4). Again unlike the echo-words none of the elements or parts constituting the words carry any meaning independently. Below a list of such formations is given.

(A)

—i :

kɛŋ-kɛŋi	'cry of a dog when beaten or cry of a child'.
kal-koli	'sound of a current or of the belly'.
khas-khosi	'hastiness'.
khɛs-khɛsi	'annoyance'.
gir-giri	'sound of indigestion of the stomach'.
ghar-ghori	'sound of a wheel or of throat'.
ghur-ghuri	'conspiration'.
ghɛn-ghɛni	'teasing of a child for something'.
tah-tohi	'bursting pain of a boil'.
dap-dopi	'blustering'.

	dham-dhomi	'blustering'.
	phar-phori	'burning sensation as from friction'.
	biz-bizi	'itching sensation'.
	bhāt-bhuti	'sound of the stomach due to indigestion'.
	rap-ropi	'keen feeling of hunger'.
	hir-hiri	'the roaring sound of clouds'.
—iā :		
	gal-goilā	'loud as of voice'.
	kou-kouiā	'very hot as of water'.
	ghɛn-ghɛinā	'very small as of fish'.
	sɛŋ-sɛiŋā	'very hot, burning'.
	sou-souiā	'liquid, watery'.
	zar-zoirā > zazzoirā	'dry'.
	thɛŋ-thɛiŋā	'tall as a tree with a few branches'.
	tāl-tuilā	'ripen'.
	dhak-dhoikā	'very white'.
	pɛn-pɛinā	'paste-like'.
	phur-phuirā	'light'.
	bhak-bhoikā	'a man who speaks loudly'.
	māu-muiā	'polite'.
	lɛŋ-lɛiŋā	'tall and thin'.
	xut-xuitā	'restless'.
	hal-hoilā	'frank , out-spoken'.
—ā :		
	sir-sirā>sissirā pāni	'shallow' water'.
	sil-silā	'cleansed'.
—ɛni :		
	pit-pitɛni	'jealousy'.

(B)

—i :		
	kal-moli	'feeling of hunger'.
	dag-mogi	'a sense of uneasiness due to extreme heat'.
—iā :		
	ghut-muitā	'dwarfish'.
	sat-boitā	'restless, smart'.
	sat-phoitā	'restless, smart'.
	lar-phoirā	'unsteady, slack'.

§ 4. The echo-words are those in which a word is 'repeated partially and the idea of et cetera and things similar to or assimilited with that, is expressed.' The first part of these words carries meaning and is used separately; while the second part has no meaning independently. Like the standard Assamese Kamrupi also substitutes the first consonant by s—in the second part in the formation of these echo-words. For example:

ghar-sar	'house and similar things'.
gharā-sarā	'horse and the like'.
mās-sās	'fish and the like'.
mad-sad	'wine and the like'.
mithɛ-sithɛ	'sweetmeat and the like'.
kāpur-sāpur	'cloth and the like'.
khori-sori	'fuel and the like'.
gākhir-sākhir	'milk and similar things'.
dāt-sāt	'teeth and the like'. cf. Bengali dā̃t-tā̃t.
zui-sui	'fire and the like'.
lɛm--sɛm	'lamp and the like'.
rod-sod	'sunshine and the like'.

If the original word begins with s-, the echo-word takes on t-. for example:

sāti-tāti	'lamp and the like'.
sāh-tāh	'tea and the like'.
sɛni-tɛni	'sugar and the like'.

In this connection the following kānnāḍā formations also may be seen:

haṇṇu-hampalu	'fruits and other things'.
anku-ḍonku	'zig-zag'.
nela-gila	'floor and the like'.
tuppa-gippa	'ghee and the like'.

NASALISATION, ASPIRATION AND MURMUR IN GUJARATI

By

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0·0. Gujarati has the following vowel and consonant phonemes:

i e ɛ u o ɔ a̤ ə, v s š y x h, ṛ ḷ, r l, m n ṇ N, pb td ṭḍ cj kg. An attempt is made here to discuss the distribution of the nasals and aitch.[1]

1·0. The class of nasal phonemes in Gujarati has the following distinctive features:—Position of articulation i.e., labial, dental and retroflex (alveolar), and nasal resonance. Beyond the alveolar region, the position of articulation ceases to be a distinctive feature, and is conditioned by the following phone. Oral closure, therefore, is a determined quality in the previous group /m/, /n/ and /ṇ/, while conditioned in the latter /N/.

/ṇ/ is a retroflex flap, and the flap is very quick in intervocalic positions. The underside of the tongue flaps quickly over the innerside of alveolar arch; sometimes the 'wipe' is considerable, going somewhat above the alveolar arch.

There are, thus, four nasal phonemes:

/m/ bilabial, nasal
/n/ dental, nasal
/ṇ/ retroflex, nasal
/N/ nasal.

1·1. Of the first three, /m/ and /n/ have greater freedom of occurrence since they occur after pause, while /ṇ/ does not; there is also a restriction on /n/, since /n/ does not occur before retroflex stops.

Save for one loan-word from Marathi, /əṇṇa/ 'elder brother', current mainly among the Gujarati speaking Marathis, /ṇ/ does not occur as a long—geminated—consonant, while /m/ and /n/ do,: /khəmma/ 'pardon', /kənna/ 'string tied to the kite'.

1. A note about the transcription: [ʿ] indicates aspiration (voiced if the preceding consonant is voiced, voiceless if the preceding consonant is voiceless, [—] below a vowel indicates a murmured vowel, # stands for pause, [ ] for phonetic transcription and / / for phonemic.)

For other positions, their occurrence is fairly congruent :

#mV, # nV; Vm #, Vn #, Vṇ #.

VmV, VnV, VṇV; VmC, VnC, VṇC; (V = any vowel, C = any consonant).

1·2. Examples : /m/, /n/, /ṇ/.

[maṇ]	'honour'	[kʌṇki]	'husk-rice'
[nam]	'name'	[t̪šanki]	'piece of bread'
[am]	'thus'	[t̪šimki]	'pinch'
[aṇ]	'command'	[kʌṇbi]	'peasant'
[van]	'complexion'	[vʌṇsi]	'it (f.) was destroyed'
[pʌṇdit]	'learned person'	[t̪šʌṇṭo]	'building' (participle)
[džʌmṇo]	'right (hand)'	[rʌmṭo]	'playing'
[bʻamṭo]	'brahmin' (derisive expression)	[manto]	'believing'

1·3. The distinctive feature of /N/ is nasality — nasal resonance — only; it has four allophones in complementation.

In the first three allophones, the contrast is localised in the following contexts :

1. [ŋ]: /ə, əh/ [ŋ] /k, g/
2. [ɲ]: /ə, əh/ [ɲ] c, j/
3. [ə̃] /ə, əh/ [ə̃] /s, š, r, l, y, v/ and any murmured vowel.[2]

If the preceding vowel is other than /ə/, /əh/, then the first two allophones vary freely with the fourth allophone [~].

4. [~]: occurs as the nasalisation of the preceding vowels /i, u, ɛ, ɔ, a/. If /ə/ or /əh/ are followed by another vowel phoneme (the following vowel should not be a murmured vowel — see allophone 3), then it occurs as the nasalisation of the vowel /ə/ or /əh/.

2. Phonetically this statement could be further refined, thus distinguishing the nasals before /s, š, y, v, r, l/ according to the difference in the articulatory character of /s, š, y, v, r, l/ and thus setting up a few more allophones: one before /s/, another before /š/, another before /y/ and so on. But this is not relevant, since they all share a common feature in having a nasal increment of the preceding vowel /ə/, which distinguishes them from other allophones.

It may be noticed that the occurrence of the allophone [ə̃] is mainly limited to the learned loanwords from Sanskrit.

/N/ :—

[b'ãg] ~ [b'ang]	'tobacco'		
[ĩg] ~ [iṇg]	'asafoetedia'		
[vãdžṇi] ~ [va̧ndžṇi]	'barren women'		
[vidžṇo] ~ [vi̧ndžṇo]	'fan'		
[ḍ^ṇko]	'gong'	[sə ə̃y^m]	'control'
[b^ṇko]	'brave'	[sə ə̃l^gnə]	'joined'
[r^ng]	'colour'	[sə ə̃vən^n]	'courting'
[s^̧ntšo]	'machine'	[sə ə̃vad]	'dialogue'
[kə ə̃s]	'proper noun of a demon'	[sə ə̃ar]	'destruction'
[və ə̃š]	'lineage'	[sə ə̃r^ks^ṇ]	'protection'
[dãt]	'teeth'	[ṭšãp]	'clip'
[kã]	'why'	[b'ɔ̃]	'ground'
[vĩṭi]	'ring'	[g'əũ]	'wheat'
[p'ɛ̃ṭo]	'turban'		
[ləũ]	'I may take' [lə̃u is a dialectical variation]		
[k ə̃i]	'some'	[dəĩ]	'curds'

1·4. The homorganic nasals (allophones 1 and 2), the 'nasal increment' of the preceding vowel, (as GRAMMONT puts it 'prolongement nasal de la voyelle précédente' Traité de Phonétique p. 365), and the nasalisation (allophone 4) are metrically equipollent (i.e. syllables of the type vowel + ᴺ are considered long). This may lend further support to the bundling of these allophones in one phoneme.

This patterning also points towards a relevant phonological feature that in Gujarati nasalisation, the point of articulation is distinctive from bilabial to alveolar (retroflex) region, and thereafter indifferent, depending only on environment.

2·0. It would, thus be clear that in Gujarati there is a two-way /m/, /n/ contrast initially, and a four way contrast /m/ /n/ /ṇ/ /N/ elsewhere: finally — before pause —, and after vowel and before consonants. Thus, initially :

/mat/	'mother'
/nat/	'caste'

finally :

/kan/	'ear'
/kam/	'work'
/kaṇ/	'funeral procession'
/kaᴺ/	'why?'

medially, after vowels and before consonants:

/cimki/	'pinch'
/maṇki/	'swift (mare)'
/janki/	'Sita's name'
/va^{N}ki/	'crooked'.

We cannot say, therefore, that before stops there is only one 'homorganic nasal', or contrastive nasals are neutralised before stops, leaving one 'archiphoneme' /N/. A more or less similar situation prevails in Marathi, where all the contrastive nasals are localised between vowels and consonants, and finally — before pause — with /m/ and /n/ contrast in initial position. With these facts before us, the following remarks by FIRTH could hardly be acceptable:

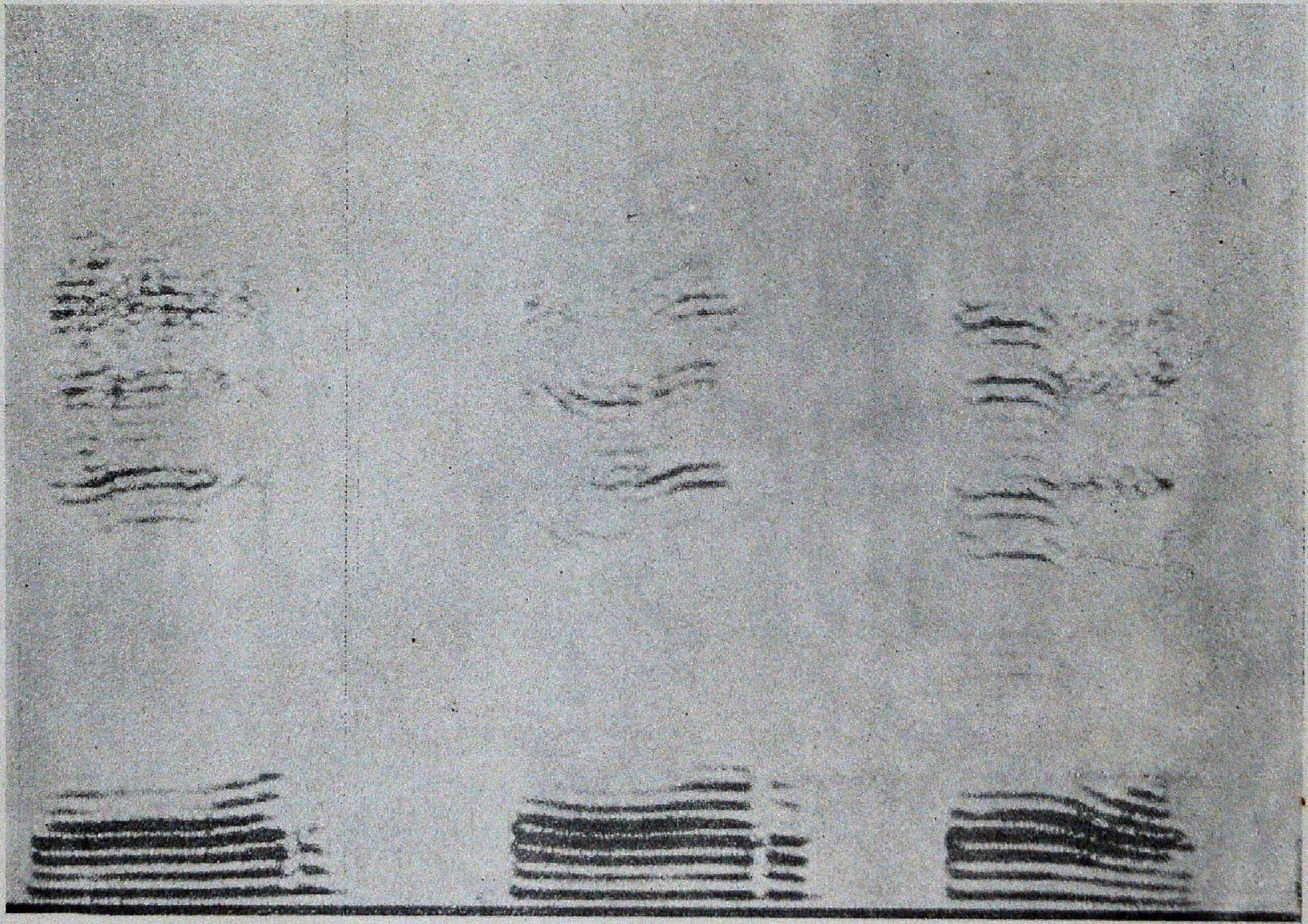
"Nasals and nasalisation in the Sanskritic languages raise fundamental questions of phonetic and phonological theory, and also problems for Roman transcription. Let us take Marathi for instance. In initial position only two nasal consonants can be used, n and m. In final position, there is a three-term nasal alterance, but immediately preceding another consonant, especially only one is possible, the nasal homorganic with the following consonant" (J. R. FIRTH, *Proceedings of the Second International Congress of Phonetic Sciences*, Cambridge, 1936, pp. 180-81.)

Examples from Marathi, a few out of many available, are given below, which amply show that all the contrastive nasals — homorganic and heterorganic — occur before consonants:

[tšəmki]	'nose ring'
[dəṇka]	'stroke'
[ḍəŋka]	'bell'
[ṭəŋk'a]	'salary

2·1. Allen refers to Firth's remarks cited above and perpetuates the same error, going a step ahead by 'enunciating' an important phonological principle, which is: "n or m in a sequence Vnt or Vmp is a very different functional unit from that in VnV or VmV; for whereas in the latter case n and m are mutually contrastive, this is not so in the former case. The homorganic nasals form a single phonological unit and a phonological transcription will recognise the fact". (W. S. ALLEN, *Phonetics in Ancient India*, London 1953, p. 45).

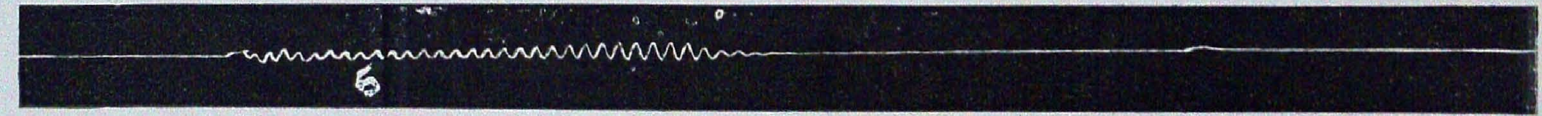
In any phonological transcription of Gujarati or Marathi, distinction between contrastive nasal phones will have to be mentioned in V-C context, and this would apply to many other New Indo-Aryan languages.



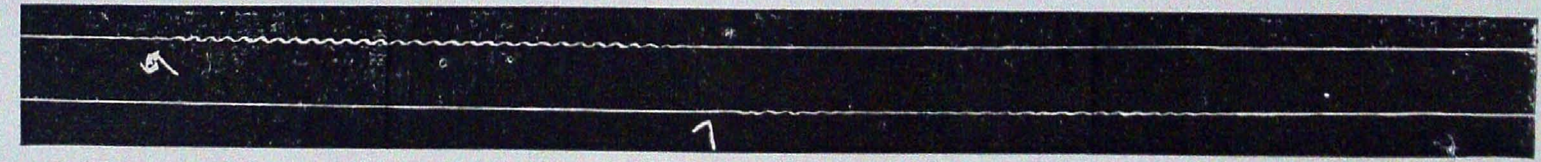
Pɔ̱r, P'ɔr, Pɔr

KYMOGRAPHS

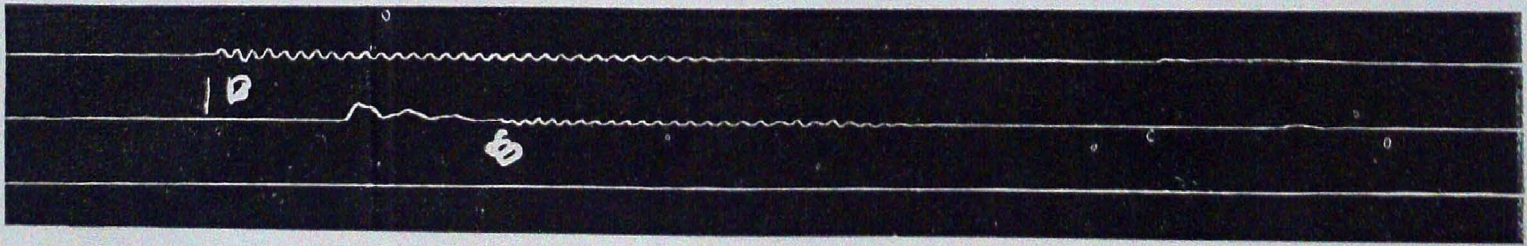
(6) Pa̱p



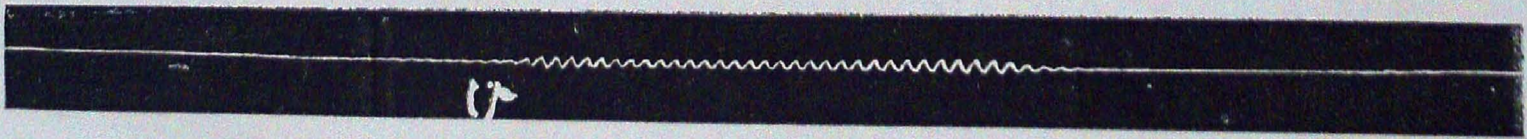
(9) dak (7) pap



(10) dʻak, (8) pʿap



(11) da̱k



2·2. The two facts that (i) the homorganic nasal is localised in a very limited set of environments (e.g. see the distribution of [ŋ̣], [ˏn] above, and (ii) the contrast between different types of nasal phonemes is not neutralised before consonants, would prevent us from supporting the statements made by FIRTH and ALLEN.

3·0. Gujarati, like many other Indo-Aryan languages has a set of aspirated stops in contrast with unaspirated stops, and it has a set of murmured vowels in contrast with simple vowels, the murmur being usually referred to as voiced aitch. It is proposed here to interpret murmur and aspiration phonemically.

3·1. Aspiration in Gujarati is the breathy release which immediately follows the stop consonants, and which is voiced when the preceding consonant is voiced, unvoiced when the preceding consonant is unvoiced. Murmur is voiced breath, low pitched and simultaneous with the vowel.

3·2. The following three sets of words will describe the situation:

1. [bar], [b‘ar), [ba̲r].
2. [pɔr], [p‘ɔr], [pɔ̲r], ([p‘ɔ̲r], is a nonsense word).
3. [aṛ], [a̲ṛ].

In [bar], the vowel is clear, there is no aspirated release of the preceding stop either. In [b‘ar], the vowel is clear, but it is preceded by aspirated release, which is voiced when the preceding consonant is voiced. In [ba̲r] the underlined vowel is murmured, and there is no aspirated release of the preceding [b].

Similarly in [pɔr], the vowel is clear, not preceded by aspirated release; in [p‘ɔr], the vowel is clear but preceded by aspirated release which is voiceless when the preceding consonant is vóiceless: and in [pɔ̲r], there is no aspirated release of the [p], but the vowel is murmured.

In [aṛ], the vowel is clear, in [a̲ṛ] the vowel is murmured.

3.3 We can consider the element of murmur [_] and the element of aspiration [‘] in complementation: aspiration (i.e. aspirated release of a preceding stop) leaving the vowel clear, while murmur being simultaneous with the vowel.

3·4. Murmured vowels do not occur after aspirated release of stops. Vowels after aspirated stops — voiced or voiceless — are always clear. Murmured vowel does not occur before pause.

3·5. One phoneme /h/ whose distinctive feature is some sort of extra breath will have two allophones: [‘] and [_]. When it is simultaneous

with the vowel it is murmur, (murmur being described as *sotto voce*, with voicing and slight lowering of pitch), when not simultaneous with the vowel it is the aspiration of the previous consonant. Murmur is transcribed after the vowel, aspiration is transcribed after the consonant.

Thus, we can rewrite the above sets of words, phonemically:

1.	/bar/,	/bhar/,	/bahr/.
2.	/pɔr/,	/phɔr/,	/pɔhr/.
3.	/aṛ/,		/ahṛ/,

Thus a nasalised murmured vowel, e.g. [ũ̱] shall be represented in the linear phonemic transcription as /uhN/.

3.6.	[p'aṭ]	'crack'	[bar]	'twelve'
	[b'at]	'cooked rice'	[b'ar]	'burden'
	[a̱t']	'hand'	[ba̱r]	'outside'
	[o̱ṛi]	'boat'	[pɔr]	'last year'
	[məḍ'i]	'small cottage for a wandering sanyasi'	[pɔ̱r]	'early morning'
			[p'ɔdž]	'army'
	[kəḍ'i]	'spiced and cooked butter-milk'	[aṛ]	'obstruction'
	[da̱ṛi]	'beard'	[a̱ṛ]	'bones'
	[d'aṛ]	'robbery'	[ũ̱]	'myself'
	[lak]	'hundred thousand'		

3.7. In my dialect, and in the speech of many educated Gujarati speakers murmur alternates with its absence:

Thus the following doublets are variations in speaking style:

/bahr/	~	/bar/	'outside'
/pɔhr/	~	/pɔr/	'last year'
/mahruN/	~	/maruN/	'my'
/vahr/	~	/var/	'aid'
/vahlo/	~	/valo/	'dear'
/dahṛo/	~	/daṛo/	'day'
/kahno/	~	/kano/	'Lord Krishna'
/pɔhḷuN/	~	/pɔḷuN/	'bread'

The reverse does not happen, i.e. the clear vowels do not alternate with murmured vowels.

3.8. One more important alteration may be mentioned here. A syllable-final voiced aspirate release alternates with the murmur of the preceding vowel:

/labh/	~	/lahb/	'advantage'
/vagh/	~	/vahg/	'tiger'
/ja^{N}gh/	~	/jah^{N}g/	'thigh'
/sə^{N}gh/	~	/səh^{N}g/	'group'
/səghḷu^{N}/	~	/səhgḷu^{N}/	'all'

This may be explained as progressive assimilation. This alteration may be considered as an additional argument for not considering the aspirated stops /kh/, /gh/, /th/ etc. as unit phonemes.

4.0. There have been some doubts about the phonetic character of the murmured vowels in Gujarati.

4.1. In the Linguistic Survey of India (Vol. IX, Part II, pp. 347-352), Grierson has given a list of words in which 'a slight h is heard, although the latter is not represented in writing'. Chatterji (S. K. Chatterji, 'Recursives in New Indo Aryan', *Indian Linguistics,* Vol. I, No. 1, 1931) describes the murmured vowels following the consonants as stops accompanied by glottal closure, and compares them to 'similar' sounds in Sindhi. Commenting on the above observation of Grierson, Chatterji further remarks, "now, this 'slight' h sound, which has been noted, is nothing but the glottal stop, or accompanying glottal closure .... Gujarati has thus consonants with glottal closure as specific phonemes". (*Ibid,* p. 31).

No glottal closure is noticed in [pər] or [ba̱r] or in any other example of murmured vowels. What is noticed is that the murmur is simultaneous with the vowel, and there is some lowering of pitch which we regard here as the function of murmur.

4.2. Suction stops or 'implosives' as they are more commonly known, are distinctive in Sindhi. Suction stops in Sindhi were described by Turner (R. L. Turner, 'Sindhi Recursives or Voiced Stops preceded by Glottal Closure', *Bulletin of the School of Oriental Studies,* London, Vol. III, pp. 301-315), and he named them as 'recursives': "Prince Troubetzkoy refers to consonants in the Caucasian languages accompanied by complete closure of the glottis (*Bulletin de la Societe de Linguistique de Paris,* No. 72, p. 204). There he calls them 'recoursives', a convenient term, I have anglicized as 'recursives'" (Turner, *Ibid.,* p. 304). He further records Grahame Bailey's observation (in a note published in the *Bulletin of the School of Oriental Studies,* Vol. II, Part IV, p. 837), "Finally Dr. Grahame Bailey in a note speaks of them as 'implosives' in which the breath is drawn in

instead of being expelled. According to him, the larynx is lowered and glottis closed. This action sucks the air back, but no appreciable amount enters the lungs. This description agrees generally with my own observation". (TURNER, *Ibid*).

4.3. Phonetically, nothing comparable happens in the case of murmured vowels following stops. CHATTERJI's observation, therefore, cannot be sustained. A few spectrograms and kymograms are reproduced here to show that no glottal closure is involved here.

We can notice in the spectrogram that while the onset of voicing is immediate after the release of p in [pɔr] and [pɔ̱r], it is delayed — being intervened by a period of voicelessness — in the case of [p˚ɔr]. [̱] in [pɔ̱r] could be distinguished by the presence of random distribution of energy, more noticeable at higher frequencies, while [ɔ] in [pɔr] is free from this.

It is difficult to notice the difference in the onset of voicing when the initial stop is voiced, but that there is no glottal stop — closure — intervening, is clear on account of continuous vowel harmonics.

In the kymograms for [p'ap], [pap] and [pa̱p], we also notice the same difference (p'ap and pa̱p are nonsense words). In the case of [p'ap], the vowel starts late, at the end of aspiration, while in the case of [pap] and [pa̱p] the onset of voicing is immediate. That the initial in [pa̱p] is not a stop with glottal closure is visible by continuous vowel vibrations after the release of p.

4.4. This much aid from instruments is taken only to show that [pa̱] is not a 'recursive' or 'implosive' as described by CHATTERJI in the paper cited above, and also in his various books (*Indo-Aryan and Hindi*, Ahmedabad, 1942, *Rajasthani Bhashā*, Udaipur 1947). A more elaborate study of murmured vowels from the point of view of acoustic phonetics may throw some light on the relation of murmured vowels with pitch in the languages like Gujarati, dialects of Rajasthani, Lahanda, Sindhi and Panjabi.

4.5. It should be noted, however, that this difference of interpretation at the phonetic level does not affect CHATTERJI's hypothesis regarding the differential treatment of -h- between the Indo–Aryan languages outside the Gangetic Doab and the dialects spoken in the Doab region. "How far is the recursive treatment of aspirates connected with tone? " (CHATTERJI, *Ibid*) suggests a further line of inquiry into the phonology of the languages outside the Doab, where languages like Panjabi and some dialects of Rajasthani have phonemic tone, Sindhi has phonemic suction stops and Gujarati has murmured vowels.

NOTES ON STEM-VOWEL ALTERNATION IN THE BENGALI VERB[1]

By

Edward C. Dimock, *Calcutta*

0.0. The following data is based on the ideolect of Mr. Bhabataran Datta of Calcutta, with whom the writer worked, in Calcutta, and at the Deccan College Summer School of Linguistics, between December, 1955, and May, 1956.

1.0. Bengali verb stems may be divided into two broad classes:

A. Stems of form 1.a. CV- or 1.b. CVi-
2. (C) VC (C)-

B. Stems of form (C) V (V) C (C) a-

1.1. These stems may be described in terms of the vowel alternations which take place in them under certain conditions.

1.2. Vowel phonemes[2] occur in the basic stems of these classes according to the following distribution:

A. 1.a. /e, a, ɔ/ 1.b. /a, ɔ/
2. /e, æ, a, ɔ, o/

B. /i, æ, a, ɔ, o, u/

1.3. Vowel alternations, when they take place, are of the following type:

	Basic Stem vowel	Alternate Stem vowel
1.	e	i
2.	æ	e
3.	a	e
4.	ɔ	o
5.	o	u

Thus, the two stems might be, and hereafter are, referred to as low and high stems, respectively.

1. My thanks are due to Professor Gordon Fairbanks, of Cornell University, and to Dr. William Bright, of the University of California, both of whom saw the greater part of the paper at the Summer School of Linguistics at the Deccan College, Poona, in 1956, and whose comments and suggestions are incorporated herein. I am especially grateful to Professor Charles Ferguson, of Harvard University, parts of whose unpublished description of Bengali I was allowed to see, and upon whose knowledge of the language I was permitted to draw.

2. The phonemes of the language are: /p, b, t, d, ṭ, ḍ, k, g, ph, bh, th, dh, ṭh, ḍh, kh, gh, č, ǰ, čh, ǰh, š, h m, n, ŋ, l, r, ṛ, ṛh, i, e, æ, a, ɔ, o, u, (length), ~ (nasalisation)/. Length of both vowels and consonants, is written as double vowel or consonant. Juncture and intonation have not as yet been analysed by the present writer.

1.4. It may be stated, as far as the present data shows, for the whole language, that, in words of CV_1CV_2 pattern, where V_2 is /i/ or /u/, and V_1 is not /a/, V_1 is the higher of two possible vowels; or, in other words, that the stem is the high stem. This is true not only for verbs:

/ken-/ "buy", /kini/ "I buy"

but for other structural classes as well:[3]

/nɔṭ/ "actor", /noṭi/ "actress"

where V_1 is /a/, there is no change:

/jan-/ "know"
/jani/ "I know".

2.0. Stems of class A:

2.1. The statement of 1.4. can be enlarged, in terms of class A stems, except where the vowel of the basic stem is /a/, to include not only words of CVCV pattern, but words of CVV (C) and CVCVC patterns, as well.

Examples:

Alternation		*Stem sub-classes* A.1.a.	A.1.b.	A.2.
1.	e/i	de- "give"	—	ken- "buy"
		dii "I give"		kini "I buy"
		diiš "you (despective) give"	—	kiniš "you (desp.) buy"
		but de "give!" (desp.)		ken "buy!" (desp.)
2.	æ/e	—	—	phæl- "throw"
				pheli
				pheliš
				phael- "throw!" (desp.)
3.	ɔ/o	hɔ- "be"	šɔi- "bear"	pɔṛ- "read"
		hoi	šoi	poṛi
		hoš (see section 2.3.4.)	šoš	poṛiš
		—	šɔ	pɔṛ

3. A possible exception is the emphatic -i suffix, the addition of which does not change the vowel of the stem:

šɔb "all", šɔbi "all (emphatic)".

However, because this suffix can be attached to any part of speech, and because of various other indications of the relative freedom of the form, there is the possibility of establishing juncture, and continuing to state the rule as without exception.

4.	o/u	—	—	oṭh- "rise up" uṭhi uṭhiš oṭh
5.	—	kha- "eat" khai, etc.	čai- "want" čai, etc.	ǰan- "know" ǰani, etc.

2.2. Vowel alternation in other situations is morphologically determined:

2.3. The following statements may be made for all verbs of the class in question.

2.3.1. High stem occurs:

1. Before the -b- morpheme of the simple future, except in class A.1.a., and in class A.1.b. when the vowel of the basic stem is /a/.
2. Before the -č- morpheme of the continuative, throughout, except where the vowel of the basic stem is /a/.
3. Before the -l- morpheme of the simple past or conditional conjunctive, except in class A.1.b., when the vowel of the basic stem is /a/.
4. Before the -t- morpheme of the past conditional (or habitual), or the infinitive, except in classes A.1.b. and A.2., where the vowel of the basic stem is /a/.

2.3.2. Examples: (all given in 1st person of their respective tenses).

Class	*Stem*		*–b*	*–č*	*–l*	*–t*
A.1.a.	de-	"give"	debo	dičči	dilam	ditam
A.2.	ken-	"buy"	kinbo	kinči	kinlam	kintam
A.2.	phæl	"throw"	phelbo	phelči	phellam	pheltam
A.1.a.	hɔ-	'be"	hɔbo	hočči	holam	hotam
A.1.b.	šɔi-	"bear"	šoibo	śoiči	šoilam	soitam
A.2.	bɔš-	"sit"	bošbo	bošči	bošlam	boštam
A.2.	oṭh-	"rise up"	uṭ (h) bo	uṭ (h) či	uṭ (h) lam	uṭ (h) tam
A.1.a.	kha-	"eat"	khabo	khačči	khelam	kheṭam
A.1.b.	čai-	"want"	čaibo	ćaiči	čailam	čaitam
A.2.	ǰan-	"know"	ǰanbo	ǰanči	ǰanlam	ǰantam

2.3.3. The geminate -čč- in certain of the forms above is the allomorph of the continuative morpheme which occurs with class A.1.a. stems.

2.3.4. In class A.1.a. stems, except where the vowel of the basic stem is /a/, vowel alternation also takes place before the -š personal ending morpheme of the 2nd person despective indicative.

bɔ- "carry" boš "you (despective) carry"
de- "give" diš "you (despective) give"
kha- "eat" khaš "you (despective) eat"

2.3.5. In class A.1.a. stems, where the vowel of the basic stem is /e/ (two stems only), the unexpected alternates /a/ and /æ/ occur: /a/ before the -o personal ending morpheme of the 2nd person familiar present, and /æ/ before the -e personal ending morpheme of the 3rd person familiar present.

de- "give" dao "you (familiar) give" dæe "he (fam.) gives"
ne- "take" nao "you (familiar) take" næe "he (fam.) takes"

2.4. The following statements may be made for all verbs of the class in question, without exception.

2.4.1. High stem occurs:

1. Before the -(i)o morpheme of the future imperative.
2. Before the -(i)e morpheme of completive and conjunctive forms.

The morphemes are so written in order to distinguish them from the 2nd and 3rd present personal ending morphemes, with which they are homophonous, to indicate that high stem occurs before them, and to indicate the allomorph -io, which occurs after /o/ as in forms of hɔ-, below.

2.4.2. Examples:

Class	Stem	-(i)o	-(i)e
A.1.a.	de-	dio	die
A.2.	ken-	kino	kine
A.2.	phæl-	phelo	phele
A.1.a.	hɔ-	hoio	hoie
A.1.b.	šɔi-	šoio	šoie
A.2.	bɔš-	bošo	boše
A.2.	oṭh-	uṭho	uṭhe
A.1.a.	kha-	kheo	khee
A.1.b.	čai-	čeo	čee
A.2.	ǰan-	ǰeno	ǰene

3.0. Stems of class B:

3.1. In verbs of this class, high stem occurs before the -(i)o and -(i)e morphemes, in stems of pattern CVCa-, except where the stem vowel is /a/.

There are no occurrences of verbs in stem-vowel /e/ of this class, in the present data.

Verbs occur in this class which have /i/ or /u/ stem-vowels, throughout; in these cases, the final -a of the stem becomes -i before -(i)o and -(i)e, and -o, elsewhere.

3.2. Examples: (in the column under a/o, examples are in 1st person present).

Stem		-(i)o	-(i)e	a/o
ǰira-	'rest"	jirio	jirie	jiroi
ghuma-	"sleep"	ghumio	ghumie	ghumoi
bæ̃ka-	"bend" (trans.)	bĕ̃kio	bĕ̃kie	bæ̃kai
nↄṛa-	"move" (trans.)	noṛio	noṛie	nↄṛai
oṭha-	"lift"	uṭhio	uṭhie	oṭhai
kamṛa-	"bite"	kamṛio	kamṛie	kamṛai
lãpha-	"jump"	lãphio	lãphie	lãphai
põũča-	"arrive at"	põũčio	põũčie	põũčai

4.0. Description of tense and personal ending morphemes, together with the allomorphic and morpho-phonemic statements which would complete the above picture, cannot be given here because of space considerations. They are, however, able to be stated in a very simple manner, and present few difficulties, of either method or presentation.

SANDHI IN MODERN COLLOQUIAL TELUGU

By

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0.0. One of the major difficulties that a non-Telugu speaker experiences in learning the present day spoken Telugu is its sandhi system. Sandhi may be defined as a class of alternations which occur among the phonemes of two or more morphs in close juncture or *saṃhitā*.[1] If the alternation is determined by a given sequence of phonemes rather than their status as constituents of certain morphemes, we call it automatic alternation. Most of the cases of sandhi in spoken Telugu are automatic.

1.00. The phonemes of colloquial Telugu, fairly representative of the educated middle class language of the Coastal Districts,[2] are as follows:—

1.1. Consonants:—

	Labial	Dental	Alveolar	Palatal	Retroflex	Velar
Stops	p ph b bh	t d dh			ṭ ṭh ḍ ḍh	k kh g gh
Affricate				c ch j jh		
Spirants	f		s	ś	ṣ	h
Nasals	m		n		ṇ	
Laterals			l		ḷ	
Trill			r			
Semi-vowels	w			y		

1. In this definition, the scope of sandhi has been extended to include the alternations that occur not only among the phonemes in immediate contact but also among those that are spaced by other phonemes. The explanation is that the phonemic alternations are simultaneous with the occurrence of two or more morphs in close juncture (for examples, see §§ 4.2 ff).

The traditional meaning in which the word Saṃhitā is used by the Sanskrit grammarians as "varṇānām atiśayitaḥ sannidhiḥ *saṃhitā*-saṃjñaḥ syāt" (ie., the closest possible proximity between phonemes is *saṁhitā*) suits well as a synonym for what is known as close juncture in Modern Linguistics (also see for definitions of close and open junctures, B. Bloch and G. L. Trager, "The Syllabic Phonemes of English", *Language* 24, p. 225).

2. The coastal districts: Nellore, Guntur, Krishna, East Godavari, West Godavari, Visakhapatnam and Sreekakulam.

If we are analyzing the speech of the uneducated classes, we have to eliminate all the aspirate stop phonemes from the list, since they are all replaced by the corresponding unaspirated ones, voiced or voiceless, e.g. educated dialect: /dharmam/ charity, justice; uneducated dialect: /darmam/. Even among the educated classes, aspirated and unaspirated stops freely alternate with differences in style, emphasis, tempo, etc., e.g. /pedda/ big: /pēddha/ extremely big (emphatic); /inkā/ still, /inkhā/ id. (emphatic).

1.11. Vowels: /i e a o u, ī ē ǣ ō ū/. On account of the absence of /æ/ corresponding to /ǣ/, long vowels are classified as separate phonemes. An alternative way is to set up /i e æ a o u/ and a phoneme of length /¯/, in which case, /æ/ occurs only before the phoneme of length /¯/.

1.2. *Allophones:*—Only a brief account of the allophones of the above phonemes is given in the following:

After an open juncture, all voiceless stops are tenser than in close juncture. All voiced stops have spirantized allophones in the intervocalic position. /c/ and /j/ have two allophones each; [t͜s d͜z] (blade-alveolar affricates) respectively, before back vowels, and [č ǰ] (prepalatal affricates) respectively before front vowels, e.g. /cūci/ = [t͜sūči]. /m/ has a bilabial spirant type of allophone [w̃] in the intervocalic and utterance-final position, e.g. /māma/ = [māw̃^] Maternal uncle or father-in-law, /waccǣm/ = [w^ččǣw̃] we came. /n/ has the following allophones: [ŋ] before velar stops, [ñ] before the palatal allophones of /c j/, [ń] (dental nasal) before dental stops and [n] (alveolar nasal) elsewhere, i.e. initially, intervocalically, in gemination and before the blade-alveolar allophones of /c j/; e.g., /nannu/ = [n^nnu] me (accusative), /mana/ = [m^n^] our (inclusive), /ancu/ = [^nt͜su] border.

Some of the distinguishable allophones of the vowel phonemes are as follows: /e/ has an opener allophone [ɛ] before an open juncture; in close juncture it is always [e] e.g. /ginne/ = [ginnɛ] a cup; /ginnelu/ = [ginnelʊ] cups (pl. -lu). /a/ is always [^]. /i e a u/ have zero alternants in the environment (V)C¹-C²(V). What C¹ and C² stand for will be specified in the following sections. All vowels have slightly lowered and retracted allophones when /a/ occurs in the following syllable, and when a geminate does not intervene between the two, /kūra/ = [kʊ̄r^] vegetable, curry, etc., /gōḍa/ = [gɔ̄d^] wall.

1.3. For the purpose of this paper at least, we have to set up two phonemic junctures, close and open. Close juncture is the feature of transition from one segmental phoneme to the immediately following one

without any distinctive pause. This has no relation to the fact that the phonemes in question are parts of the same morpheme or different morphemes, e.g. /wāḍu/ he, /wāḍiki/ to him [(dative; morpheme division: wāḍ-i-ki)].[3] An open juncture is the feature of transition from one segmental phoneme to the next with definite pause in between; sometimes, this pause is bridged by an intonational pattern, generally, of the type (rising-falling). Examples of the foregoing:

1. wāḍu telis*ī*telēnaṭṭugā māṭḷāḍǣḍu He spoke with half-knowledge (i.e. in a knowing-not-knowing manner).

2. wāḍu telis*ī*, *te*lēnaṭṭugā māṭḷādǣḍu He, even after knowing, spoke, as if he hasn't.

Many more features of juncture can be distinguished in Modern Telugu speech but their phonemic analysis in the present state of our knowledge is not entirely clear.[4] We need only to state here that the sandhi alternations to be discussed in this paper occur only in close juncture.

Consonantal Sandhi:

2.00. In sequences of $(V)C^1\breve{V}C^2(V)$, $\breve{V}$ stands for any of the short vowels i, a and u (rarely e) alternating with zero. This $\breve{V}$ ($\sim \emptyset$) marks the morpheme boundary, i.e. either $\breve{V}$ goes with the proceeding morpheme or the following one, or constitutes a morpheme by itself. A result of $V \sim \emptyset$ (or in terms of process, the loss of the vowel between C^1 and C^2) is sandhi between C^1 and C^2 which together alternate with a variety of sequences. Comparing the sequences of $C^1\breve{V}C^2$ with their corresponding sandhi alternants, we can analyze the data into four sets as follows:—

2.1. $C^1\breve{V}C^2 \sim C^1C^2$

a. ṭVr ~ ṭr E.g. māṭ*r*ādu A word doesn't come out (māṭ*a* word, *r*ādu does not come).
ḍVr ~ ḍr tōḍ*r*āgam a rāga called tōḍi.

3. Hyphen (-) used here and elsewhere in the examples is only intended to indicate the morpheme boundary but not as a mark of any distinctive feature.

4. The whole question of the place of juncture in linguistic analyses needs further working and systematization. For the different views expressed about this, see W. E. Welmers "A Descriptive Grammar of Fanti", *Language* 22, Dissertation Series 39, p. 20; Rulon S. Wells, *Language* 23, p. 108; he says "Juncture wherever it occurs is a morpheme though often with no detectable meaning"; also cf. B. Bloch and G. L. Trager, *op. cit.*

b. pVm	~ pm	kaḍu*pm*aṇṭa burning of stomach (kaḍupu womb or stomach, maṇṭa burning; also jealousy).
bVm	~ bm	gulā*bm*ogga a rose-bud (gulābi rose, mogga bud).
c. nVt	~ nt	dā*nt*o ēmpani ? What is the business with that ? (dān-i-tō with that, ēm what, pani business).
nVd	~ nd	icci*nd*āntō . . . , with what has been given (icc-ina that given, dāntō with the thing).
nVj	~ nj	wi*nj*arugu Hear and then move (win-i having heard, jarugu to move, stir; imper. sg.).
nVr	~ nr	ma*nr*āmuḍu . . . , our Rama . . . (mana our, rāmuḍu proper noun).
nVl	~ nl	wi*nl*ēdu That is not heard (win-a to listen, lēdu no, not).
d. rVn	~ rn	wā*rn*ē cūśǣnu I saw him (honorific) (wār-i-n-ē him-only).
rvl	~ rl	mā*rl*ēdu It hasn't changed (mār-a changing lēdu none).
e. lVt	~ lt	kā*lt*ō tannǣḍu He kicked with the leg (kāl-i-tō with the leg).
lVd	~ ld	kā*ld*u It won't burn (kāl- to burn, -a- neg., -du it).
lVc	~ lc	pā*lc*embu a milk container (pāl- milk, -a- of, cembu container).
lVj	~ lj	gāju*lj*ata a pair of bangles (gājul-a- of bangles, jata a pair).
lVn	~ ln	ī māṭa*ln*ākenduku ? Why these words for me ? (ī these; māṭa-lu words, etc. nāku to me, enduku ? why).
lVr	~ lr	pā*lr*āyi A marble stone (pāl-a- milk-of, rāyi stone).

2.2. $C^1 \breve{V} C^2 \sim C^1C^3$ or C^3C^2

Here, C^3 results from partial assimilation to C^1 or C^2 as the case may be. We can call this componential assimilation, i.e. some phonetic component

of one phoneme is assimilated to some component of the adjacent one in close juncture.

a. ṭVn ~ ṭṇ E.g. pāṭṇāku rādu I don't know the song (pāṭa song, nāku to me, etc.).

ṭVl ~ ṭḷ māṭḷu words (māṭa word, -lu pl. suffix).

b. nVṭ ~ ṇṭ wiṇṭam hearing (win- to hear; -aṭam noun-forming suffix).

nVḍ ~ ṇḍ nūṇḍabbā oil tin (nūne oil, ḍabbā tin).

c. lVṭ ~ ḷṭ cāḷṭam being sufficient (cāl- to be sufficient; -aṭam, vide supra).

lVḍ ~ ḷḍ cāḷḍam being sufficient (same as above, -aḍam dialectal variant of -aṭam).

2.21. In these cases, it is clear that the alternation of n, l with ṇ, ḷ is through their assimilation to the retroflex phonemes in contact. There are also several cases of assimilation on allophonic level, e.g. /rājdu/ = [rāzdu] It won't take fire (from rāj-to take fire, -a- neg., -du neut. sg.). In this case, since [z] nowhere contrasts with [j], it will be taken as only an allophone of /j/ before a dental stop in close juncture. Then, naturally, we have to include this in phonemics but not in morphophonemics. This raises a descriptive problem in Modern Linguistics, at least from a pedagogic point of view; namely, sandhi alternations which belong together as part of morphophonemics have to be split between phonemics and morphophonemics, simply because, in some cases, the assimilated phoneme turns up as a different phoneme but in others only as a non-contrastive componential transformation of the assimilated phone. Since the alternations ṭVn ~ ṭṇ, and nVṭ ~ ṇṭ are automatic, there can be no contrast between /n/ and /ṇ/ in this particular environment, i.e., before or after a retroflex stop. However, as /n/ elsewhere contrasts with /ṇ/, we have to set up this alternation under morphophonemics.

2.3. $C^1 \breve{\bar{V}} C^2 \sim C^2C^2$

2.31. Stops:

a. Velar series

kVk ~ kk E.g. perukkō Pull it out for yourself (peruku to pull out; -kō reflexive imper.).

gVk ~ kk aḍukkō Go begging! (adugu to ask, beg.)

gVg ~ gg — taru*gg*āwundi It is deficient (tarugu deficiency; -gā in that manner; wundi it is).

kVg ~ gg — ceru*gg*aḍa sugar-cane (ceruku sugar-cane, gaḍa stick).

b. Palatal series

cVc ~ cc — cū*cc*eppu Look in and tell (cūc-i- having seen ceppu tell!).

jVc ~ cc — jā*cc*eṭṭu jasmine tree (jāji jasmine, ceṭṭu tree).

jVj ~ jj — gā*jj*æḍī glass jar (gāju glass, jæḍī jar).

cVj ~ jj — cū*jj*aḍisi poyināḍu Seeing it, he got scared (cūc-i- having seen; jaḍis-i– having feared; poyināḍu he is gone, intensifier).

c. Dental series

tVt ~ tt — pā*tt*alupu old door (pāta old, talupu door).

dVt ~ tt — gē*tt*annindi Buffalo kicked (while milking) (gēde she-buffalo; tann- to kick).

dVd ~ dd — sū*dd*ēniki? Why (do you need) the needle? (sūdi needle, pin, dēniki? what for).

tVd ~ dd — pā*dd*āram old thread (pāta old, dāram thread).

Dental + Palatal

tVc ~ cc — pā*cc*eppu old sandal (pāta old, ceppu sandal).

dVc ~ cc — gē*cc*ærmam buffalo-skin (gēde buffalo, cærmam skin).

tVj ~ jj — rā*jj*æḍī stone jar (rāt-i of stone).

dVj ~ jj — lē*jj*alubu No cold (lēdu No, jalubu cold, i.e. disease; this particular combination is infrequent in spoken Telugu).

d. Retroflex series.

ṭVṭ ~ ṭṭ — nā*ṭṭ*am planting (nāṭ- to plant, -aṭam noun-forming morpheme).

ḍVṭ ~ ṭṭ — pā*ṭṭ*am singing (pāḍ- to sing).

ḍVḍ ~ ḍḍ pāḍḍam singing (-aḍam a dialectal variant of -aṭam vide supra).

ṭVḍ ~ ḍḍ nāḍḍam planting (nāṭ- to plant + -aḍam).

e. Labial series

pVp ~ pp kōppaḍḍāḍu He fretted in anger (kōpa- n. anger, paḍu to feel).

bVp ~ pp jaluppaṭṭindi (One) cought cold (jalubu cold, paṭṭ- to catch).

bVb ~ bb jēbbaruwayndi The pocket became heavy (jēbu pocket; baruwu heavy).

pVb ~ bb nābbaṇḍa a slab-stone (nāpa slab, baṇḍa stone, rock).

2.32. The occurrence of sequences where both C¹ and C² are aspirated stops is usually rare; but where one of them is an aspirated stop and the other unaspirated, the principle of their sandhi alternation is as follows: When C² is an aspirated stop, C¹ is assimilated to C² in the matter of voicing, devoicing, and palatalization similar to the alternations described under 2.31.

kVgh ~ ggh ogghaṇṭayndi One hour has passed (oka one, ghaṇṭa hour).

dVch ~ cch ēcchārjīḍabbu? Where is the money for fare? (ēdi? where; chārjī fare).

On the contrary, where C¹ is an aspirated voiced stop and C² an unaspirated one, C¹ alternates with the corresponding unaspirated voiced stop:

E.g. dhVt ~ dt kadtelisindi The story is known to me (kadha story, telus- to be known).

dhVc ~ dc bādcālā taggindi The pain has subsided a good deal (bādha pain, cālā much).[5]

2.4. In cases where both C¹ and C² are identical phonemes of the sonorant group (i.e. nasal, lateral, trill, semi-vowel and sibilant), the alter-

5. Some of my informants with whom I experimented with these utterances could not distinguish acoustically between dt and tt; so also between dc and cc.

nation may be shown as C^1C^2 or C^2C^2 since the question of assimilation does not arise, e.g.:

a. Nasals

nVn ~ nn — wi*nnu* I won't hear (win- to hear; -a- neg., -nu 1st pers. sg.).

mVm ~ mm — pā*mm*īda .... on the serpent (pāmu serpent, mīda on).

b. Lateral

(V̆)lVl ~ ll — ne*ll*u months (nela month, -lu pl.).

c. Trill

rVr ~ rr — vā*rrā*lēdu He (honorific) hasn't come (vāru he; rā- to come).

d. Semi-vowel

wVw ~ ww — bā*ww*eḷḷæḍu The brother-in-law has left (bāwa brother-in-law; weḷḷ- to go).

e. Sibilant

sVs ~ ss — cūssarigā ceppu Look in and say clearly (cūs-i having seen; sari-gā- well).

2.5. A different type of sandhi alternation involving mutual componential assimilation among the phonemes involved may be formulated as follows:

$$C^1 \breve{V} C^2 \sim C^3C^3$$

Here, both C^1 and C^2 are simultaneously assimilated to each other, with the result, that they alternate with a doubled phoneme which contains the phonetic components of both C^1 and C^2, e.g.:

a. ḍVn ~ ṇṇ — pā*ṇṇ*u I won't sing (pāḍ- to sing; -a- neg.; -nu 1st pers. sg.).

mū*ṇṇ*ellu three months (mūḍu three, nellu months).

b. ḍVl ~ ḷḷ — cū*ḷḷ*ēḍu (One) hasn't seen (cūḍ-a- seeing, lēdu not or no).

wā*ḷḷ*ēḍu He is not (in or there) (wāḍu he, lēḍu no).

3.00. The sandhi alternations among consonants so far described may be represented clearly in a chart as follows:

C^2	k	g	c	j	ṭ	ḍ	t	d	p	b	n	m	l	r	w	s
C^1																
k	kk	gg														
g	kk	gg														
c			cc	jj												
j			cc	jj												
ṭ					ṭṭ	ḍḍ					ṭṇ		ṭḷ	ṭṛ		
ḍ					ṭṭ	ḍḍ					ṇṇ		ḷḷ	ḍṛ		
t			cc	jj			tt	dd								
d			cc	jj			tt	dd								
p									pp	bb		pm				
b									pp	bb		bm				
n			nc	nj	nt	nd	nt	nd			nn		nl	nr		
m												mm				
l			lc	lj	lt	ld	lt	ld			ln		ll	lr		
r					rt									rr		
w															ww	
s																ss

Vocalic Sandhi

4.00. There is only one type of vowel-sandhi which can be called automatic. Since two vowels cannot occur in succession within the same morpheme, there ought to be a morpheme boundary between any sequence of two vowels. If they occur in open juncture, sandhi does not take place. As in the case of consonants, vocalic sandhi occurs in close juncture.

4.1	$\breve{V}^1\breve{V}^2$	$\sim$	$\breve{V}^2$	(i.e. in this environment V^1 has always a zero alternant).
	i e	$\sim$	e	E.g. adekkaḍa? Where is that? (adi that, ekkaḍa? where).
	i a	$\sim$	a	pan*a*yindi The work is finished (pani work; ay- to be over).
	e i	$\sim$	i	ginn*i*kkaḷḷēdu The cup is not here (ginne cup; ikkaḍa here).
	a i	$\sim$	i	āyan*i*kkaḷḷēḍu He is not here (āyana he).
	u e	$\sim$	e	illekkaḍa? Where is the house? (illu house)
	u o	$\sim$	o	atanuokkaḍē .... he alone .... (atanu he, okkaḍ-ē one only).

Only a few examples are given above, but the rule operates without exception as far as my knowledge goes. Sequences where V^1 is /o/ are rare.

4.2. Two more types of alternation which are non-automatic but which cover a wide area of vowel-sandhi in Modern Spoken Telugu are as follows:

4.21. In a sequence of more than two syllables in close juncture, the vowel of the second syllable is assimilated in quality to that of the following syllable. The alternations may be set forth as follows:

uCī/ē	$\sim$	.. iCi	E.g. kal*i*s-*i* having met (kalus- to meet, -i past morpheme) kal*i*sē adj. meeting—(-ē non-tense adj. suffix).
uCa	$\sim$	.. aCa	kal*a*w-*a* in order to meet (kaluw- to meet, allomorph of kalus-, vide supra).

This alternation operates without exception among the verb class. Exceptions occur among the noun class, e.g., moguḍu husband, moguḍimīda.. on the husband (-i- oblique morpheme, mīda on), not mogiḍi....

4.22 Final /i/ of a member of the N (noun) class alternates with /u/ before the plural morpheme -lu:

E.g. gad*u*lu rooms (gadi room, -lu pl.)
katt*u*lu knives (katti knife)

5.00 So far, we have concerned ourselves mainly with the automatic alternations in spoken Telugu since it is easy for a non-Telugu speaker to master this particular area without having to wait till the morphological analysis of the language is worked out. The non-automatic alternations or the morphologically conditioned alternations among the phonemes may well be

treated under the respective morphological classes rather than under morphophonemics.

5.1 Sandhi alternations when phonemically represented introduce problems of morphemic identification; for instance, the phonemic sequence /pāttiyyi/ may represent morphophonemically either [pāditiyyi] make a basin (for plants) or [pātitiyyi] plant it and (then) pull. In cases of this type, where a given morphophonemic sequence automatically alternates with a single phonemic sequence, it is better to represent them in morphophonemic transcription than in the phonemic. This has the advantage of showing a morpheme in a single phonemic shape every time it occurs; in other words, the phonemic alternations among its allomorphs are automatically determined by the environment of the other phonemes. A statement about these alternations will however be made under morphophonemics. In the above example from Telugu, since the phonemic sequences V/dit/V and V/tit/V do not occur anywhere, they are always phonemically /tt/. Hockett suggests this procedure as a preliminary to morphemic analysis, which he calls "Preliminary Normalization."[6]

5.11 However, it should be noted that this procedure cannot be applied to cases where non-automatic sandhi is involved. A good example from Modern Telugu is the following: /pannu/[1] tooth, plural /paṇḷu/ teeth; /pannu/[2] tax, plural /pannulu/ taxes. Here, it is only the identification of the particular morpheme, i.e. pannu[1] or pannu[2], that determines the sandhi alternation of /nnul/ to /ṇḷ/ or /nnul/ (zero alternation) respectively. Therefore, it becomes necessary here to represent the sequence only in transcription.

6. "Problems of Morphemic Analysis", *Language* 23, pp. 324-327.

THE POSITION OF THE NASALS IN THE BHOJPURĪ PHONOLOGICAL SYSTEM

By

Bishwa Nath PRASAD, *Patna*

In Bhojpurī, there are only two unaspirated nasals m and n, differentiated before vowels, but before plosives and fricatives these oppositions do not occur, as the nasal always goes by the quality of the occlusive or the constrictive that follows. Each of the plosives and the fricatives has thus its corresponding homorganic nasal consonant which precedes the occlusion or the constriction. In their articulation, the soft palate is lowered and there is homorganic oral closure. These nasal alternances forming groups with their correlates are tabulated below:—

Plosives.

Velar	ŋk	ŋkh	ŋg	ŋgh
Palatal	ɲc	ɲch	ɲj	ɲjh
Retroflex	n̨t̨	n̨t̨h	n̨d̨	n̨d̨h
Dental	n̪t	n̪th	n̪d	n̪dh
Bilabial	mp	mph	mb	mbh

Fricative.

Alveolar ns or n̵s[1].

It may be noted that before h the nasal component has velar articulation so that ŋ + h is pronounced as ŋgh in Bhoj., e.g., siŋgh 'lion'.

1. n may maintain its alveolar articulation when it is followed by s, or it may have alternatively a slightly open articulation in such contexts, because of the tongue taking the position for the fricative s without forming complete closure for n. This may be phonetically transcribed as n̵s, e.g., bʌnsi: or bʌn̵si:.

Examples :

ŋ	—	s^ŋka:	'doubt'	b^ŋk	'bank'
		p^ŋkha:	'fan'	p^ŋkh	'wing'
		d^ŋga:	'riot'	r^ŋg	'colour'
		k^ŋghi:	'comb'	s^ŋgh	'association'
ȵ	—	c^ȵc^l:	'unsteady'	p^ȵc	'arbitrators'
		p^ȵcha:	'watery discharge'		x
		p^ȵja:	claw'	r^ȵj	'anger'
		jh^ȵjh^ʈ:	'botheration'		x
ɳ	—	gh^ɳʈa:	'bell'	c^ɳʈ	'miser'
		k^ɳʈha:	'a neck ornament'	k^ɳʈh	'throat'
		^ɳɖa:	'egg'	jhuɳɖ	'crowd'
		ʈh^ɳɖha:	'cold'	ʈh^ɳɖh	'cold'
n̪	—	m^n̪t^r:	'incantation'	^n̪t	'end'
		r^n̪thi:	'bier'	p^n̪th	'diet'
		g^n̪da:	'dirty'	b^n̪d	'closed'
		dh^ndha:	'work'	g^n̪dh	'smell'
m	—	c^mpa:	'a kind of flower'	h^ʈək^mp	'hubbub'
		x		l^mph	'lamp'
		l^mba:	'long'	əwl^mb	'support'
		kh^mbha:	'pillar'	th^mbh	'post'
n	—	b^nsi:	'flute'	h^ns	'goose'
or					
n̶	—	(or b^n̶si:)		(h^n̶s)	

It may be noted that there are limited number of words in Bhoj. having the homorganic class-nasals as the first element of such groups in the final position. The instances of the use of such groups are mostly intervocalic. mph represents a gap, the only word with mph being l^mph, from the English 'lamp'. The cross-marks indicate the gaps in the examples compiled above.

On the basis of these perceived phonetic seqences the following nasal alternances classed into six series of localization may be noted[2]: —

Velar	—	ŋ
Palatal	—	ˌn
Retroflex	—	n̡
Dental	—	n̪
Bi-labial	—	m
Alveolar	—	n
		ꞥ (fricative)

Moreover, there are occurrences of simultaneous nasal components with the following alternances (sānunāsika forms) under the progressive or regressive effect of a nasal consonant, or in contiguity with a nasalized vowel preceding or following them: —

(i) flapped retroflex ˌn̆ and ˌn̆h.
(ii) semi-vowels ỹ and w̃.
(iii) liquids r̃ and l̃.
(iv) aspirate h̃.

The anunāsika in the case of the vowels has been represented as their nasalization and has been represented by the symbol ~ placed over them.

2. Our approach here in the treatment of the nasals may be compared with that of M. B. Emeneau in his article The Nasal Phonemes of Sanskrit (*Lang.* XXII, 1946, pp. 86-93), in which he has made some good suggestions regarding the 'phonemic' organization of the Sanskrit nasals. His whole treatment is based on the assumption that the Sanskrit alphabet was phonemic in character. It is, however, not clear what meaning he attaches to the use of the term phonemic in this connection. The Sanskrit alphabet system, for all we know, was essentially syllabic and the modern Indian languages which use the Ñagarī syllabary or other cognate forms still preserve that character (op.cit. Firth, Sounds and Prosodies, *TPS,* 1948, pp. 132-33). According to his phonemic conception, Emeneau treats the anusvāra (ˌnɿ) as a separate phoneme in Sanskrit, while in our treatment of the Bhoj. nasals, the anusvāra has been regarded as a bearer of prosodic features which serves as a compendium scripturae for ŋ, ˌn, n̡, n̪, n, m, n or ꞥ before another consonant of the same class. Even in Sanskrit the anusvāra had a limited scope. 'Its proper place in the interior of a word is only before fricatives' (Siddheshvar Varma, *Critical Studies in the Phonetic Observations of Indian Grammarians,* p. 154). In Bhoj., we have shown by palatography that even before the fricatives the anusvāra takes the prosodic colouring according to its context by assuming an alveolar articulation with proper oral closure or with slightly open aperture (īṣadvivṛta). This characteristic articulation of the nasal without full oral closure is important from our point of view as it suggests the possibility of a similar feature in the utterance of the anusvāra before the Sanskrit fricatives, and y, r, l, v and h which were the only definite succeeding sounds to which an anusvāra could be appended. Before the īṣatspṛṣta semi-vowels, the laterals and the tapped sounds the ansuvāra took the īṣatspṛṣṭa or partial contact articulation, and before the īṣadvivṛta (slightly open aperture) fricatives it took īṣadvivṛta articulation. Thus even in these contexts the anusvāra was obviously not immutable, but took prosodic colourings according to its contexts as it did in the case of the plosives.

So far as Bhoj. is concerned the anusvāra before h as already noted above takes the velar articulation as n + h = ŋgh, and before y, r, l, v, the anusvāra does not occur in Bhoj.

It has been differentiated in our treatment from the anusvāra (nasal after-sound) which has been interpreted as equivalent to a vowel followed by the corresponding savarṇa or class-nasal of the following sound.[3]

There are only two nasal consonants n̪ and m used in contradistinction from each other in initial, intervocalic and final positions in Bhoj. ɳ with flap articulation is found in intervocalic and final positions only in a few tatsama loan-words from Sanskrit used by the educated speakers in Sanskritic style and thus belongs to a different system, the common Bhoj. speaker using n in its place. There is thus no contrast between n and ɳ. Examination of the sequences in which the nasals occur shows at once that it is only medially before the stops of its own series, before h and the alveolar fricative s that each of the nasals occurs, taking upon itself the prosodic colouring according to its contexts. In the case of s following the nasal sound, alveolar closure is formed immediately before the articulation of the fricative, or the nasal may be pronounced with incomplete closure before s. This prepares us for evaluating ŋ, ɲ, ɳ n̪, and n or n̶ as consisting of a basic nasal articulation n with environmental modifications depending upon the articulatory movement which it precedes. Thus it is the one unit n which is realized at the junctions with a consonant immediately following in the same word as ŋ, ɲ, ɳ, n̪ and n or n̶. In the phonological transcription the analysis may be indicated by the employment of the basic symbol *n* which is to be interpreted as the immediate nasal in prosodic junction, with the junction prosodies as shown below:—

n + [k, kh, g, gh] = ŋ [k, kh, g, gh]
n + [c, ch, j, jh] = ɲ [c, ch, j, jh]
n + [, h, , h] = ɳ [, h, , h]
n + [t, th, d, dh] = n̪ [t, th, d, dh]
n + ṡ = ns or n̶s
n + h = ŋ^{g}h

As already noted above, the nasal component before *h* has velar articulation and *n* + *h* is realised with an anaptyctic or prosodic *g* before *h*. The obstruant is physiologically a 'denasalizer' as it stops the nasalization process. *n* + *h* is thus equivalent to ŋ^{g}h at the phonetic level of abstraction. Note in this connection that the sequence *n* + *h* is quite different from *nh* which symbolizes the aspirated form of *n* and has been treated as a unit consonant in the same way as *dh*, etc. In *nh*, the nasalization is a simultaneous component of aspiration (= n h̃), while in *n* + *h* *h* is not nasalized, owing to the appearance of the prosodic g between n and h as a 'denasalizer'.

3. For a similar equation in the case of the anusvāra before plosives, see Pāṇini, Aṣṭādhyāyī 8.4.58.

n + *h* may, therefore, be phonologically represented by writing *g* above the line as n^gh[4] to avoid confusion with *n* + *gh* (=*ngh*), which is phonologically different from *n* + *h*, though the two sequences sound alike phonetically. *n̵h* is different altogether.

As regards the medial[5] bilabial nasal m, it has to be noted that it is not the same m which is differential before vowels. The latter has oral closure followed by oral release while the former has no oral release after the closure. As a medial, *m* carries the same prosodic mark of junction having the same prosodic quality of co-localization with the plosives of the bilabial series that follow it as *n* has with the series of the obstruants following it. Thus medial m-like *n* has also to be interpreted as in prosodic junction, with the junction prosodies.

m + (p, ph, b, bh) = m (p, ph, b, bh).

We are thus left with two nasals, m and n in parallel distribution with each other before vowels and in final position, and two medial nasals m and n, between which oppositions do not occur. There is still scope for analysis and further abstraction which may lead to the unification of these two medial nasals. Medial m and n have one common prosodic factor of going by the quality of localization of the obstruant that follows. This common factor of the prosodic mark of junction may be abstracted and symbolized by ɵ to cover all the cases of the medial nasals. This one symbol will be adequate enough to serve as carrier of seven (including n̵) junction prosodies of the medial nasal in junction with a following obstruant. Thus

ɵ [k, kh, g, gh]	= ŋ [k, kh, g, gh]
ɵ [c, ch, j, jh]	= ɲ [c, ch, j, jh]
ɵ [, h, , h]	= ɳ [t̢, t̢h, d̢, d̢h]
ɵ [t, th, d, dh]	= n̪ [t, th, d, ḍh]
ɵ [p, ph, b, bh]	= m [p, ph, b, bh]
ɵ s	= ns or n̵s
ɵ h	= n̯ gh

With this prosodic symbol we can unambiguously represent in phonological transcription

g^ŋga:	'the Ganges'	as *gaɵga:*
p^ɲc	'arbitrators'	as *paɵc*

4. The other possible devices of notation might be to use a different h symbol or hyphen for *n* + *h* (*n* -*h*) or a ligature for *nh* (aspirated n) and no ligature for n + h or to represent the aspirated n as *ñh* or *nh* and *n* + *h* as *nh*.

5. The medial nasal is here used in the sense of the nasals in junction before the immediately following consonants within the same word.

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p^ṇḍit	'learned'	as *paɵdit*
s^n̲t	'saint'	as *saɵt*
c^mpa:	'a particular kind of flower tree'	as *caɵpa:*
b^n̲si: or b^nsi:	'flute'	as *baɵsi:*
siŋgh	'lion'	as *siɵh*

This will also enable us to dispense with the two double consonants nn and mm, which can be conveniently represented as *ɵn* and *ɵm* respectively, e.g.,

p^n̲na:	'page'	as *paɵna:*
cum̲ma:	'kiss'	as *cuɵma:*

The prosodic symbol *ɵ* can thus play the same part as the anusvara could play in the Devanāgarī orthographic system.

This discussion, however, is not meant to force a final decision as to whether the medial nasal should be handled by the use of the symbol *ɵ* in the Roman orthography for Bhoj., but it does show the way to a higher level of abstraction yielding a result of wider range and more comprehensive value.[6]

Since we have already got *m* as a basic nasal symbol by virtue of its parallel distribution with *n* in other contexts, it may be conveniently used for the m-like *n*, before the bi-labial plosives on the ground of articulatory similarity, for it does not mean the employment of any consonants as shown above.

But it must be clearly understood that the similarity of articulation and the use of the same letters do not imply any phonological or so-called "phonemic identity".[7]

6. The present Hindi spelling in the Nāgarī script is very capricious in the use of the medial nasals. Kaithī being free from the literary conventions has proved more successful in adjusting itself to the phonological demands by using the anusvāra only in all cases of medial nasals. In Nāgarī, however, some write रङ्ग (r^ŋg) 'colour', while others write रंग (raɵg), some write लम्बा (l^mba:) 'long' while others write लंबा (laɵba:). The use of the anusvāra in such contexts is resented by the Sanskritists, who following Pāṇini, "Anusvārasya yayi parasavarṇaḥ", 8.4.58, prefer to write invariably the phonetic savarna (homorganic) class-nasals before the following plosives and use the anusvāra only before the non-plosives. This discussion might serve as a basis for the reformation and simplification of the Hindi spelling by the use of the anusvāra only in all cases of medial nasals, both in the interest of systematic writing and that of convenient printing.

7. See Firth, on hypostatization of letters and the cramping effect of "one symbol per phoneme" (I.P.A.), 'Sounds and Prosodies' *TPS*, 1948, pp. 129-136.

As all the vowels in Bhoj. can be nasalized, it will be noticed that generally it is with the vowels of long duration that the nasalization or the 'anunāsika' occurs and the 'anusvāra' or the nasal after-sound of the class to which the following sound belongs, occurs with the vowels of relatively short duration. But at the same time there are several instances of 'tadbhawa' words in which the 'anunāsika' is used with a 'short' vowel also, e.g., h͂s^l 'laughing', r͂g^l 'colouring', sĩga:r 'decoration', ͂jo:r 'light', ͂kuri: 'small sprout'. Such is specially the case where an original 'long' vowel is shortened on account of its antepenultimate position, as is done in the case of the strong and the long forms of nouns and of the causal verbs, e.g.,

ã: gan	'courtyard'	ãgəna:	
bã: s	'bamboo'	bãsəwa:	
bhĩ: jal	'wetting'	bhĩja: wal	'causing to wet'
phẽ: kal	'throwing'	phẽkəwa: wal	'causing to throw'.

Similarly the 'anusvāra' or the class-nasal after-sound is also found after a vowel with relatively long duration in a number of 'tatsama' and 'semitatsama' words from Sanskrit, e.g.,

ka:nḍ	(ka: ṇḍ)	'canto',
sa:nt	(sa: n̪t)	'quiet',
pa:nḍe:	(pa:ṇḍe:)	'a title'.

Besides, Bhoj. has instances of syllables ending with the nasal n, e.g.,

bahi: n	'sister'
hi: n	'short'
li: n	'being absorbed'

and also of syllables with nasalized vowels, e.g.,

hĩ:	'even'
lĩ:	'take'.

In order, therefore, to avoid ambiguity, and also in consideration of the vocalic character of the 'anunāsika' and its distinct prosodic implications as syllabic nasal, it seems desirable to represent it phonologically by the special symbol ~ placed over the nasalized vowel.

As regards the nasalized consonants in Bhoj., viz., the nasalized forms of *y*, *w*, *r*, *l* and *h*, (ỹ, w̃, r̃, l̃ and h̃), no separate symbol is necessary for

them as the 'anunāsika' in their case is dependent upon or associated in every case with the nasalization of the preceding or the following vowel. In other words, they are parts of the nasalization process. They therefore do not need any special diacritical mark over them. The nasalization mark ~ placed over the adjoining vowel will be sufficient to indicate the nasal component in their case without ambiguity.

It may be pointed here that since the nasalization process affects *y, w, r, l* and *h,* and the vowels preceding and following them simultaneously, it may not be necessary, when this feature of the effect of nasalization in such cases has been stated, to mark the nasalization more than once, and that can be done in the syllable which may hold *y, w, r, l* and *h* themselves, e.g.,

bã:ỹã:	'left'	may be written as *ba:ỹa:*,
kũ:w̃ã:	'well'	may be written as *ku:w̃a:*,
dĩ:h̃ĩ:	'give'	may be written as *di:h̃i:*.

It is thus clear that from the total phonetic data of two phonematic nasals *m* and *n* six (or seven including ñ) medial nasal alternants, five types of nasalized consonants, besides the nasalized vowels, we have abstracted only three units for phonological purposes which may be placed under three main types of articulation:—

(i) The bilabial nasal symbolized by *m*
(ii) The lingual nasal symbolized by *n*
(iii) The vocalic syllabic nasal symbolized by ~

Or in terms of phonological categories, we may place them under the following three heads:—

(i) The phonematic nasals in parallel distribution .. *m* and *n*
(ii) The prosodic nasals .. ⊙
(iii) The nasal prosody (nasalization) bound up with the vowel system .. ≃

This simple treatment, which does not involve any complicated prosodic statement[8] so far as Bhoj. is concerned, and this minimum number of units is capable of taking account of all the phonetic and distributional data with nasal modulation in Bhoj.[9]

8. Which Emeneau seems to be afraid of in the case of possible prosodic treatment of the Sanskrit nasals (op. cit.—Emeneau, The Nasal Phonemes of Sanskrit, *Lang.*, XXII, 1946, p. 92).

9. It may be of interest to note that the observations made here about Bhojpurī will be found broadly applicable to the other eastern speech-forms like Magahī, Maithilī and also to several of the Hindi dialects like Brajbhāṣā and others.

THE LANGUAGE PROJECT AT THE DECCAN COLLEGE*

By

S. M. KATRE, *Poona*

1. The Deccan College, originally established in 1821 and closed in 1934 as an undergraduate college in arts, was revived by the Government of Bombay in 1939 as a foundation for research and postgraduate studies, principally in Linguistics and History, providing opportunities for sustained and planned research in the field generally comprised by the terms 'humanities' and 'social sciences.' The department of Linguistics provided for research and postgraduate instruction in Indo-European, Dravidian, Semitic and Sanskrit (especially Vedic) studies with four chairs. Similarly the department for Social Sciences included chairs in Proto- and Ancient Indian History, Medieval Indian History, Maratha History and, in particular, in Sociology-Anthropology. The objective of the Linguistics Department was not only the conduct of planned research in the field of Indian Linguistics by members of the faculty, but imparting training to postgraduate students in the field of historical and descriptive linguistics.

2. At the time of establishing these two departments at the Deccan College only one University in India was imparting postgraduate instruction in linguistics. There was a full course in linguistics consisting of eight papers at the M.A. level at Calcutta, thanks chiefly to the early presence of two eminent Indian linguists there, Dr. I. J. S. TARAPOREWALA and Dr. S. K. CHATTERJI. It was the intention of the Reorganisation Committee appointed by the Government of Bombay that an active centre for training and research should be established in Western India at the Deccan College, although linguistics was still not a major subject of study in the University of Bombay, though Bombay was the first to recognize the value of such studies by accepting the Wilson Philological Lectureship in the latter half of the nineteenth century. However, the intrusion of the second global war within a month of the revival of the Deccan College in its new shape hindered the

* This paper should more appropriately be entitled "Project for Linguistic Development and Research at Deccan College with special reference to studies in the principal Indian languages." It gives the history and progress of the project from 1953-1956.

planned development of all its departments. Most of the field work could not be carried out, and in linguistics a large part of the research undertaken departmentally centred round the study of texts rather than living speech.

Nevertheless, the work planned out and executed by the departments of the Deccan College indicated the need for undertaking two fundamental but long-term projects: a Dictionary of Sanskrit on historical principles and an Ethno-Linguistic Survey of India, by both the linguistics and social sciences departments. Accordingly these projects were submitted to the Government of India for financial assistance during 1946. During 1948 two important steps were taken towards the realisation of these objectives. The first step was the establishment in Poona of a regional university, the first of such to be founded in the Bombay State. In the draft statutes a special Board of Studies in Linguistics was established although linguistics was not yet a major subject of study at any stage of university education. The second step was the acceptance by the Indian and Bombay Governments of a certain financial liability for establishing a small nuclear department at the Deccan College for extracting material for the Dictionary of Sanskrit on historical principles, from an approved Minimum Programme consisting of over 2000 separate texts from the earliest Vedic to about the end of the 18th century, covering every aspect of Sanskrit learning.

3. The second project submitted by the Deccan College for an Ethno-Linguistic Survey of India could not find a ready response either at Governmental level or among scholars interested in such studies. The main reason why scholars could not undertake this stupendous but urgent research was that their number was small and those competent to undertake sustained research were already committed to other studies. There was no training centre, other than at Calcutta and Poona, where the necessary tools of research could be acquired. Even these centres lacked the equipment necessary for carrying on such work, apart from personnel to undertake the necessary training project.

The interest shown by the Rockefeller Foundation of New York in the problems of communication in India and the application of linguistics to the solution of such problems assisted the Deccan College during 1953 to organise a conference of linguists and educationists. This conference was called at the Deccan College in May 1953, following a conference called by the University of Poona on the problems of a medium of instruction at the university level, consequent upon English ceasing to be such a medium. This conference, presided over by Sir Ralph Turner, Director of the School of Oriental and African Studies, University of London, deliberated for three

days and unanimously recommended that steps be taken to initiate three important projects by the Deccan College.[1]

4. The Governing Body of the Deccan College resolved that the Director should submit, on the basis of the recommendations made by the Conference and the special reports submitted by the Standing Committee, a phased programme of study and research and indicate the steps necessary for undertaking them with full details of financial outlay and personnel required. Following a short visit to the United States and to Europe under the Rockefeller Foundation, the Director submitted a short-term project for linguistic development and research at the Deccan College with the primary object of organising three schools of linguistics during 1954 and 1955, associating both senior and junior linguists from the United States and the United Kingdom with their counterparts in India, for intensive training in descriptive and historical linguistics and use of modern techniques of descriptive linguistics and their applications to problems of communication.

1. The following is the text of the Resolutions:

I. *Fundamental Needs of Indian Linguistics*:

1. It is the considered opinion of this Conference that it is necessary that a knowledge of the history of a language should form an integral part of the study pertaining to that language. This Conference therefore recommends that all Universities should include the scientific study of languages in their curricula for the B.A. and M.A. degrees and provide for this teaching by the creation of Departments of Linguistics.

2. As a fundamental Human Science, Linguistics, in the opinion of this Conference, should form part of the equipment of workers in Anthropology and in the practical domain of some aspects of Social Services. The Conference consequently draws the attention of the Anthropological Survey of India and of other relevant organisations, Governmental or otherwise, to the necessity of providing for some special training in Linguistics among their workers.

3. The Conference also recommends that for the proper teaching of languages and linguistics, laboratories for Experimental Phonetics be provided at the Universities.

4. The Conference further recommends that the following fundamental tasks in connection with the immediate needs of Indian Linguistics be undertaken:

(a) Historical Grammars of the principal Indian Languages in a uniform series.
(b) Translation into principal Indian Languages of the most important standard books on General and Indian Linguistics written in foreign languages.
(c) Dialect Studies and Dialect Geography be given a top priority since the material forming the basis of these studies is fast disappearing.
(d) Critical editions of important texts in the principal Indian languages.
(e) A new Linguistic Survey of India on comprehensive and modern lines to be undertaken on an all-India level.
(f) Establishment of a Bibliographical Service for Linguistics (specially Indian).

This preliminary project of 18 months commencing from **1st July 1954** had the following three distinct aims:

(a) Training of between 60 to 75 Indian scholars in essential field techniques for linguistic research in modern Indian languages for supplying the personnel for long-term projects like the new Linguistic Survey of India.

(b) Associating younger American scholars with the training of selected Indian scholars and giving the essential elements for pursuing their own field of research and acquisition of knowledge in the particular language selected by each.

(c) Bringing together senior linguists from India, United States and the United Kingdom not only for joint participation in the instruction of the training programme but also for clarification of dif-

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II. *The Project for Common Vocabularies of the Principal Indian Languages*:

1. In the opinion of this Conference the Project submitted by the Deccan College is one of great significance to the scientific study of Indian Linguistics as well as to its application to practical problems. The Conference, therefore, recommends that it should be undertaken as soon as possible with the co-operation of scholars from all parts of the country.

2. This Conference further recommends that:

(a) The organisation and direction should come from the Deccan College who are the sponsors of the Project under the general supervision of its Director.

(b) A Standing Committee consisting of:

1. Sir Ralph Turner, (Chairman)
2. Sr. S. K. Chatterji
3. Dr. Baburam Saksena
4. Professor T. N. Sreekantaiya
5. Dr. S. M. Katre (Convener)

should be constituted to advise the Director on matters of organisation and direction of work on the Project. Members of the Standing Committee should be exofficio members of the Consultative Body of Experts envisaged in the Project. *etc.*

III. *Training Facilities for specialisation in Indian Linguistics for Indian and Foreign Scholars*:

1. The Conference recommends that a Summer and or Winter School be inaugurated at the Deccan College in which Indian and Foreign Experts can give intensive training in principles and methodology of modern Linguistics as applied to Indian Languages.

2. The Conference requests the authorities of the Deccan College to extend the training facilities designed for the special staff to be recruited for the Project to other scholars interested in Indian Linguistics.

3. The Conference further recommends that Universities, Governments and Foundations be approached to award scholarships for suitably qualified students for specialising in Indian Linguistics at this School and to give facilities for their staff to participate in the activities of the School.

ferent techniques and methodologies for evolving a suitable approach to Indian Linguistics.

The preliminary project of training was supported by a generous grant from the Rockefeller Foundation, apart from the nominal fees charged for registrants and the scholarships awarded by the Government of India.

5. The first School of Linguistics under the preliminary project opened on 15th November 1954. In his inaugural address Dr. Suniti Kumar CHATTERJI, the doyen of Indian Linguists, reviewed the sustained progress of Linguistics in India right from the days of Pāṇini, and invited the attention of linguistic scholars to the rapid strides made by descriptive linguistics in recent years, particularly in the United States. It was a happy augury, he said, that a linguistic school of the type usually known as a Linguistic Institute in the United States was being organised for the first time in India, and the Deccan College which had done pioneering work in linguistics was, in his opinion, the most appropriate venue, for the holding of such schools. The school would present the latest development of research in various fields of linguistic science and offer opportunities for discussion of current problems, demonstration of techniques and stimulation of research in each aspect of the linguistic field.

Advantage was taken of the holding of the Winter School of Linguistics to organise the first annual meeting[2] of the Linguistic Society of India in continuation of the School. A majority of the registrants of the School enrolled themselves as members of the Society and participated in its two-day programme, the first day of which was highlighted by the distribution of certificates to successful registrants completing their courses, at the hands of the President of the Society, the late Dr. I. J. S. TARAPOREWALA, in whose memory the present volume of *Indian Linguistics* is being published. Dr. TARAPOREWALA also happened to be the first Director of the Deccan College. By inviting the first annual session of the Linguistic Society in Poona the Deccan College established an inseparable link between the Society and the language project sponsored by it. As a result of this the Society was registered in Calcutta and was augmented by the incorporation of the Indian Philological Association. The Linguistic Society of India also sponsored, jointly with the members of the faculty, the special jubilee volume of *Indian Linguistics* offered to Dr. CHATTERJI, and inaugurated the new series in a revised format as the joint publication of the Linguistic Society

2. Originally the Deccan College had extended an invitation to the Linguistic Society to hold such annual meetings as far back as in 1941.

of India, incorporating the Indian Philological Association. The Linguistic Society thus became co-sponsor of the language project at the Deccan College.

6. The second School of Linguistics was organised during the summer of 1955 from May 9 to June 18. Compared to the total number of registrants which was 75 for the first Winter School (of whom 60 actually attended the courses), the actual number of those who registered for the second school was more than double this number. While the sign of increasing numbers was encouraging as interest in linguistic studies spread and opportunities were offered, the organisers were caught unprepared to cope up with the large number of practicals in phonetics and phonemics in view of the limited number of members of the faculty.

This school was inaugurated by a general lecture on linguistics by Professor Henry M. HOENIGSWALD, the Senior Visiting Linguist from the United States. At the concluding function of the school, presided over by the Head of the Bombay State, Dr. Hare Krushna MAHTAB, certificates were distributed to successful candidates.

7. During 1955-56 Dr. Gordon H. FAIRBANKS, Associate Professor of Linguistics at Cornell University, was invited to the post of Senior Visiting Linguist at the Deccan College, to participate in the training programme. Dr. Biswanath PRASAD of Patna University was appointed Indian Visiting Professor to be in charge of the training programme and to assist Professor FAIRBANKS in directing and coordinating the work of junior Indian and U.S. scholars. Two junior research associates from the United States arrived during August-September 1955 for specialising in Bengali and Kannada respectively.[3]

On the basis of the results of the first two Schools twelve fellowships were recommended and seven accepted for one year's intensive training in descriptive linguistics at the Deccan College.[4]

8. In view of the strictly limited number of senior faculty members available in India who[5] could participate in the training programme at the Deccan College, the Rockefeller Foundation had agreed to offer a certain number of fellowships in the United States for such scholars as were sponsored jointly by the Deccan College and the institutes employing them. Among the first batch of scholars so deputed were Professor T. N. SREEKANTAIYA of Karnatak University, Dr. P. B. PANDIT of Gujarat University and Mr. V. I. SUBRAMONIAM of Travancore University. They attended the differ-

3. *Viz.*, Mr. E. C. DIMOCK and Dr. W. O. BRIGHT respectively.
4. See Table No. 1 below.
5. See Table No. 2 below.

ent Summer Institutes of Linguistics in the United States before joining the Universities to which they were assigned.

9. The third and last school of linguistics under the preliminary project was held in the autumn of 1955, from October 17 to November 26. 81 scholars registered for this school. The school was appropriately inaugurated by Mr. B. G. KHER, Chairman of the Official Language Commission which was then in session in Poona. With the experience of the past two schools the third one was much better organised, in phonetic and phonemic practicals as well as in the distribution of courses. A continuing programme of studies for those who had attended the previous session was made possible. Another feature of significance in the two schools held during 1955 was the bringing of informants for some of the primitive languages of India[6] with which the majority of registrants had no direct acquaintance. These courses in field methods proved both attractive and instructive.

10. The close association between the organisation of the three schools of linguistics and the Linguistic Society of India resulted in the accession of strength to the Society in its life- and annual membership. Most of the members of the faculty were either original life members or newly recruited life members, while all registrants became ordinary or life members at the time of enrolling themselves for the schools. This new accession to the strength as well as stimulation of contacts between members of the faculty and registrants at the schools brought on new life to the Society. The sixteenth volume of *Indian Linguistics* was presented to Dr. Suniti Kumar CHATTERJI on the occasion of his sixty-fifth birthday during the All-India Oriental Conference at Annamalainagar (in December 1955) at the hands of Dr. S. RADHAKRISHNAN, Vice-President of India and General President of the Conference. Broad-based on membership drawn from every nook and corner of India the Linguistic Society has become the mouthpiece of this new activity in linguistics sponsored by the language project at the Deccan College.

11. With the end of the preliminary project the Deccan College reviewed the position and came to the conclusion that there was still need for a continuing programme for linguistic development and research in order to supply the personnel requirements of long term projects like the Linguistic Survey of India or for applications of linguistics to problems of communication, etc. In particular it was felt that the personnel requirements for continuing the summer and winter schools of linguistics were much below the minimum, necessitating the drawing upon the same group of senior linguists

6. See Table No. 3 below.
7. See Table No. 4 below.

from different parts of India for each school so organised. No University was offering a comparable course for descriptive techniques; the demand for such courses more than justified a continuing of the summer schools. In the meantime the University of Poona provided for the introduction of a full course of general and special linguistics (each comprising four papers at the postgraduate level for the M.A. degree, effective from June 1958). Similarly the Government of Bombay approved the introduction of postgraduate first and second year diploma courses in Linguistics at the Deccan College with effect from June 1956. The Regulations for these latter provide for due credit to be given to those who attend the Summer and Winter Schools of Linguistics jointly sponsored by the Deccan College.

The language project at the Deccan College was chiefly responsible for the widening interest in linguistic studies all over the country. The organisers felt that the time had come to hold such schools outside Poona in order to carry the advantage to different parts of the country. The problem of finding an adequate number of faculty members to impart instruction during such schools from within the country necessitated the pooling of resources on a global basis, the chief source still being the United States and the United Kingdom. The Standing Committee felt that until the end of 1959 the personnel requirements for conducting summer schools of linguistics could not be met entirely from the country. Moreover it was also felt that while linguistics should find an honoured place in university curricula the time had not yet arrived for universities to institute a major postgraduate course in linguistics primarily for lack of competent personnel. Consequently it was felt that the Deccan College and the Poona University must supply the impulse and direction for some time to come; it was only when the linguistics department in Poona was thoroughly organised and adequately manned to supply a continuous stream of competent linguists for filling in the requirements of other universities interested in instituting departments of linguistics that such departments could actually be started without starving any of those previously set up. The Committee felt that such development should be envisaged on a phased basis; till that time the Deccan College should continue to take the lead in conducting the training and research programme and build up a strong postgraduate department of linguistics in all its branches (general, descriptive, historical and comparative) for supplying the needs of other universities. The first phase for such a development was envisaged as the moving out of the Summer School from Poona to different parts of India on a co-sponsorship basis. Since the members of the faculty were primarily to be drawn from India and all the available members were intimately connected with the Linguistic Society of India as original or newly recruited life members, the Linguistic Society offered to be one of the co-sponsors of the continuing programme for linguistic development and research with the Deccan

College. The third partner in this growth would naturally be a University situated outside the region of Poona. Invitations had already been received from the Universities of Annamalai and Agra for holding future summer schools in their campuses. Taking all these things into consideration the Deccan College approved a continuing programme of linguistic development and research at the end of the preliminary project. As before, the funds for this development were principally received from the Rockefeller Foundation. This second programme was divided into two phases of 15 and 27 months respectively. The first of these phases is coming to an end on 31st July 1957.

12. Under the first phase of the continuing programme it was decided to hold two summer schools of linguistics which would provide graded continuing courses to registrants from previous schools in addition to basic tool courses for new registrants. The Advisory Committee also replaced the autumn or winter school of linguistics by organising a linguistic seminar confined to a few selected senior scholars, including the fellows and fellows-designate, with the object of carrying on directed research and offering opportunities for advanced students for consultations with members of the faculty without formal teaching in joint projects of research.

The first summer school under the continuing programme of linguistic development and research at the Deccan College attracted 142 registrants. The school was inaugurated by the Rt. Hon'ble Dr. M. R. Jayakar, for eight years Vice Chancellor of the University of Poona and Chairman of the Governing Body of the Deccan College, and was concluded by the distribution of certificates to successful candidates at a joint function of the school and the local members of the Linguistic Society of India by Dr. Sukumar Sen, President of the Society and a Member of the faculty for three of the four schools of linguistics so far organised.

13. As a part of the policy of giving further training abroad to both younger and senior scholars the Rockefeller Foundation again awarded research fellowships. With the return of some of these scholars from abroad after a year's further study and training, the membership of the faculties required to handle the different courses during the summer schools will be greatly strengthened, though the number will not be adequate until 1960.

Similarly two additional junior linguists from the United States were enabled to come to India for study of Hindi (Braj) and Kannada (Northern Standard) under the Language Project at the Deccan College.[8]

8. *Viz.*, Mr. Lewis Levine and Dr. William C. McCormack respectively.

On the return to the States of Dr. FAIRBANKS as Senior Visiting Linguist in 1956, his place was offered to Dr. H. A. GLEASON, Jr. of Hartford Seminary. Likewise on his return from U.S.A. Dr. P. B. PANDIT of Gujarat University was invited to join the Deccan College as Visiting Professor of Linguistics in the place of Dr. B. N. PRASAD.

14. The three years during which the Deccan College has been active in organising the development of linguistic studies in India have led to fruitful results. Among the Universities which have newly entered the field of linguistics since 1953 may be mentioned the following:

1. Agra (with its Institute of Hindi Studies).
2. Ahmedabad (Gujarat University: Department for Gujarati Literature and Linguistics).
3. Aligarh (with a special project for the linguistic survey of the surrounding region).
4. Annamalai (with a Silver Jubilee Department for Dravidian, specially Tamil, Linguistics).
5. Baroda (with two special papers in Linguistics at the M.A.).
6. Dharwar (Karnatak University, with two chairs for Kannada and Dravidian Linguistics).
7. Travancore.
8. Waltair (with a special department for an etymological dictionary of Telugu).

These are in addition to the Universities of Calcutta and Poona which had already established departments of linguistics.

The Union Government have had under active consideration the setting up of a new Linguistic Survey of India. Though presumably no steps may be taken during the Second Five Year Plan period the consequent delay may well turn out to be a period of preparation if the response to the schools organised by the Deccan College is a safe indication.

15. Significant developments have taken place within the Deccan College itself. The most important project on which the College started its work since 1948 on the Dictionary of Sanskrit on historical principles is now constituted into an autonomous department with a full-time Director and Editor in charge and an enlarged staff, working under the supervision and control of a Board of Editors appointed jointly by the Union Government and the Governing Body of the Deccan College.

The Government of Bombay approved the first and Second Year post-graduate diploma courses to be started at the Deccan College with effect from June 1956, and it is expected that the first examination will be held

in July 1957. As part of the second five-year plan of development for the College, Government have also sanctioned the creation of two Readerships in Indo-Aryan and Austro-Asiatic Linguistics. The first stage in self-sufficiency regarding faculty needs has thus been definitely achieved, and regular training can be imparted with the minimum assistance of the staff now available through the current development project.

16. A special committee of the Linguistic Society of India met on June 16, 1956, and recommended to the Society the sponsorship of organising the preparation and publication, in a uniform series, of historical grammars of 18 principal Indian languages and comparative grammars of Indo-Aryan, Middle Indo-Aryan and Dravidian languages.[9] While accepting this recommendation the Society also resolved to bring together, through the members of the faculties of the schools of linguistics, all such universities which have facilities for undertaking field work in descriptive linguistics directed towards working out in detail sections of the proposed Linguistic Survey of India, and get the individual plans fitted into an over-all coordinated project and have them submitted to the University Grants Commission for support. Similarly a special conference of Vice-Chancellors and Educationists was proposed to be called for discussing the organisation of linguistic studies in different Universities and finding ways and means of holding periodic Schools of Linguistics in different parts of the country.

9. Assamese: Upendra Goswami,
Bengali: Suniti Kumar Chatterji,
Gujarati: Prabodh B. Pandit,
Hindi (Khadi Boli): Baburam Saksena,
Braj Bhasa: Dhirendra Varma,
Eastern Hindi: Baburam Saksena,
Bhojpuri: Udai Narain Tiwari,
Maithili: Subhadra Jha,
Kannada: T. N. Sreekantaiya,
Malayalam: K. V. Nambudiripad,
Marathi: N. G. Kalelkar,
Oriya: K. B. Tripathi,
Western Panjabi: Harved Bahri,
Eastern Panjabi: K. C. Bahl,
Sanskrit: S. M. Katre,
Tamil: T. P. Meenakshisundaran,
Telugu: G. J. Somayaji,
Sinhalese: D. E. Hettiaratchi.
Comparative Grammar of Indo-Aryan: Sir Ralph Turner,
Comparative Grammar of Middle Indo-Aryan: Sukumar Sen,
Comparative Grammar of Dravidian: A. N. Narasimhia.

The Linguistic Society of India hopes to be able to publish between two and three volumes each year, beginning with 1958.

17. The first of the autumn linguistic seminars sponsored under the continuing project of research and development in linguistics was organised between the 18th of October and 17th of November 1956. In all 36 scholars (out of 48 enrolled) were selected to attend the seminar, including past and present fellows and the fellows-designate. The emphasis was more on perspectives rather than formal basic teaching in linguistics; consequently the seminar concentrated mainly on discussions on specific problems of research and training in field methods. Six field methods courses were organised as under:

1. Sindhi	:	Indo-Aryan
2. Korku	:	Munda
3. Lushai	:	Tibeto-Burman
4. Bodo	:	Tibeto-Burman
5. Nkonde	:	Bantu
6. Iraqui-Arabic	:	Semitic

Each group consisted of 5 to 10 registrants and they were directed to work out phonemic analyses of the particular languages while working with native informants.

The object of these seminars was the completion of directed research in the field of descriptive linguistics by which means each individual scholar trainee would receive intensive guidance for working out set problems and making a contribution to linguistic studies in general. The training spread over two or three previous summer schools would be exemplified in a piece of completed research under supervision of the faculty of the seminar and thus enable each individual scholar thereafter to continue research on his own.

Students who had problems of their own individual research were enabled to consult various members of the faculty taking part in the Seminar. This ensured their getting guidance not only from teachers of their own universities but also of other universities, thus widening their scope and bringing them into stimulating contact with active research scholars from different parts of the world.

18. By providing fellowship grants to selected junior Indian linguists,[10] tenable at the Deccan College for one year ordinarily, the project has enabled them not only to receive intensive training in descriptive and comparative linguistics but also to achieve an adequate scientific description

10. See Table No. 1 below.

of their own idolects. At the end of the project will accumulate, ready for publication, accurate descriptions of some of the more important languages of India. Along with these, the fruit of the field-methods courses in the autumn Seminars will yield similarly descriptions of some of the less known dialects and primitive languages. Towards much of these studies the junior linguists coming from the United States and the United Kingdom will have opportunities of contributing significantly.

19. It is as yet too early to estimate the contribution that the project for linguistic development and research sponsored by the Deccan College will make towards establishing linguistics in India. There has been considerable awakening among the scholars regarding the real scope of linguistics as a science. The demand for further instruction, even during the hot summer months when these schools are organised, is an indication that there is real need for continuing to give such assistance to those requiring and demanding it. It may be that at the end of the current project at the Deccan College in 1959 Indian Universities will be sufficiently organised to sponsor these summer schools under their own financial arrangements and with the aid of Indian staff drawn from different parts of the country. The present organisation hopes that even when that stage is achieved the country will not be denied the aid of foreign experts who may cooperate with their Indian colleagues on the present basis.

The Deccan College project has not yet touched on the question of the application of linguistics to the problems of communication. A beginning has been made in analysing the phonemic and syllabic frequencies of some selected modern Indian languages with a view to design scientifically the basis for a system of speed-writing. The Government of India have considered the possibility of commissioning the Deccan College and similar institutes with research into other Indian languages for devising the scientific basis for a system of speed-writing.

As yet there are no scientific methods evolved for teaching a second or third Indian language to adult literates; similarly the development of a scientific system of teaching English as a foreign language to speakers of various Indian languages has not yet received adequate attention. In the courses offered for the Summer Schools of Linguistics greater attention will be directed towards language teaching methods. Part of the work of the junior American linguists will be not only a description of the languages selected by them for study, but also the compilation of teaching materials for use in the United States. Dictionaries of some of the principal Indian languages, particularly of the sub-standard or local standard speeches appear to be necessary as aids to teaching materials.

The contribution that linguistic studies can make to the problem of intercommunication with the development of regional languages as media of instruction and vehicles for the expression of thought at all levels has yet to receive proper consideration. It was partly as a result of the synonymic dictionaries of Indo-Aryan and Dravidian languages projected by the department of linguistics at the Deccan College which led to the College ultimately to sponsor this development and research project. However, it now appears certain that the Deccan College will concentrate on fundamental issues and together with the University of Poona, develop a strong department to supply the needs of other Universities. The field of applied linguistics, therefore, is open for other universities and institutes as soon as they are ready with the requirements of staff and finances.

The Linguistic Society of India, at its last annual meeting in Poona in 1956, resolved to sponsor, jointly with the Anthropological Society and the Anthropological Survey, researches regarding the tribal languages. Part of such work has been included in the field methods courses of autumn seminars; but an integrated project requires to be worked out in detail. Doubtless the leadership shown by the Linguistic Society of India will to a large extent determine the success of this project.

20. This fruitful cooperative project sponsored by the Deccan College has brought together Indian, American and British linguists for training and research; perhaps by the time the present project comes to an end other countries in Europe and Asia may also contribute their quota of senior and junior scholars. With the attainment of independence the study and development of Indian languages has acquired importance, necessitating scientific description and recording of unrecorded material, particularly from the spoken standard dialects. Linguistic conflicts arising from lack of scientific knowledge can only be solved by continuous application and propagation of scientific techniques. Herein lies the utility of linguistics: both for science and knowledge as well as for application of such knowledge for the resolution of misunderstandings and conflicts.

India was among the first of the countries where scientific linguistics was born and practised. Even after the lapse of more than twentyfive centuries when descriptive linguistics established itself in the West, Pāṇini still continues to be the model. It is therefore significant that the West and India have once more come together to reestablish linguistics here. Let us prove ourselves worthy heirs to both and build up a new tradition and a new approach to Indian Linguistics.

21. A few Tables are reproduced below to illustrate the arguments and statements contained in this paper.

TABLE No. 1

List of Fellows and Fellows-Designate

Fellows—1955-56

Shri H. S. Biligiri	...	Kannada.
„ G. C. Goswami	...	Assamese.
„ K. S. R. Sharma	...	Telugu.
„ A. R. Kelkar	...	Marathi.
„ V. V. Singh	...	Hindi.
„ M. A. Gaffar	...	Urdu.
„ H. S. Ananta Narayana	...	Tamil (Sanketi).

Fellows—1956-57

Shri Upendra Goswami	...	Assamese.
„ Kalicharan Bahl	...	Panjabi.
„ C. M. Naim	...	Urdu.
„ R. D. Deshpande	...	Marathi.
„ P. W. Urdhwareshe	...	Marathi.
„ R. P. Agarwal	...	Hindi.
Smt. Swarnalata Prasad	...	Hindi.
Shri Jag Deva Singh	...	Hindi.
Smt. V. Rajam	...	Tamil.
Shri K. Doraiswami	...	Kannada.

Fellows-Designate—1957-58

Smt. Suhasini Laddu	...	Marathi.
Shri R. N. Gaidhani	...	Sanskrit.
„ T. S. Manickam	...	Tamil.
„ K. V. Nambudiripad	...	Malayalam.
„ R. C. Hiremath	...	Kannada.
or		
„ M. R. Ranganath	...	Kannada.
„ B. N. Bhatt	...	Gujarati.
„ G. N. Reddy	...	Telugu.
„ B. B. Kachru	...	Kashmiri.

TABLE No. 2.

Alphabetical List of the Faculty Members of the four schools giving place of deputing authority.

S. No.	Name	Place	Winter 1954	Summer 1955	Autumn 1955	Summer 1956
1.	H. V. Bhayani	Bharatiya Vidya Bhavan, Bombay.	—	—	—	P
2.	J. Burton-Page	School of Oriental & African Studies.	—	P	—	P
3.	J. A. B. van Buitenen	Utrecht University, Holland.	P	—	—	—
4.	William O. Bright	California University, U.S.A.	—	—	P	P
5.	John Brough	London University.	—	—	—	P
6.	S. K. Chatterji	Professor Emeritus of Indian Linguistics, Calcutta University.	P	P	—	—
7.	G. B. Dhall	Agra University	P	P	P	P
8.	Edward C. Dimock	California University, U.S.A.	—	—	P	P
9.	Gordon H. Fairbanks	Cornell University, U.S.A.	—	—	P	P
10.	Charles A. Ferguson	Harvard University, U. S. A.	—	—	—	P
11.	G. S. Gai	Kannada Research Institute, Dharwar.	—	P	P	—
12.	P. C. Ganeshsundaram	Deccan College, Poona.	—	P	P	—
13.	A. M. Ghatage	Karnatak University, Dharwar.	—	—	P	P
14.	John Gümperz	Cornell University, U.S.A.	P	P	P	P
15.	Henry M. Hoenigswald	Pennsylvania University, U.S.A.	—	P	—	—
16.	N. G. Kalelkar	M. S. University, Baroda.	—	P	P	—
17.	Iravati Karve	Deccan College, Poona.	—	P	P	—
18.	S. M. Katre	Deccan College, Poona.	P	P	P	P
19.	Julius D. Lanerolleo*	Ceylon University	—	—	—	—
20.	Masood Husain	Aligarh University, Aligarh.	P	P	P	—
21.	T. P. Meenakshisundaran	Madras University, Madras.	—	—	P	P
22.	M. A. Mehendale	Deccan College, Poona.	P	—	P	—
23.	T. N. Narasimhia	Mysore University, Mysore.	—	—	—	P
24.	S. V. Pillai*	Travancore University, Trivandrum.	—	—	—	—
25.	P. B. Pandit	Gujarat University, A'bad.	P	P	—	—
26.	B. N. Prasad	Patna University, Patna.	P	P	P	—
27.	Baburam Saksena	Allahabad University	P	P	P	—
28.	C. R. Sankaran	Deccan College, Poona.	P	P	P	—
29.	Sukumar Sen	Calcutta University.	P	P	—	P
30.	Aryendra Sharma	Osmania University, Hyderabad.	—	—	—	P
31.	T. N. Sreekantaiya	Karnatak University, Dharwar.	P	P	—	P

P = Participated

Sr. No.	Name	Place	Winter 1954	Summer 1955	Autumn 1955	Summer 1956
32.	G. J. SOMAYAJI	Andhra University, Waltair.	P	P	—	P
33.	V. I. SUBRAMONIAM	Travancore University, Trivandrum.	P	—	—	—
34.	Udai Narain TIWARI	Allahabad University.	—	—	—	P
35.	I. J. S. TARAPOREWALA	Retd. Director, Deccan College.	P	P	—	—
36.	S. T. TULPULE	Poona University, Poona.	—	—	P	P
37.	Dhirendra VARMA	Allahabad University.	P	P	—	—
38.	Uriel WEINREICH	Columbia University, U.S.A.	—	—	P	P
39.	D. J. WIJAYARATNE	University of Ceylon.	—	P	—	—

* Could not participate owing to previous commitments).

TABLE No. 3

List of participants who have received Overseas Fellowships from the Rockefeller Foundation:

1. Professor V. I. SUBRAMONIAM.
2. Dr. P. B. PANDIT.
3. Prof. T. N. SREEKANTAIYA.
4. Dr. N. G. KALELKAR.
5. Dr. A. M. GHATAGE.
6. Dr. G. S. GAI.
7. Sri A. R. KELKAR.
8. Sri H. S. BILIGIRI.
9. Sri. G. C. GOSWAMI.
10. Shr M. S. PILLAI.

TABLE No. 4

LIST OF INFORMANTS

Summer School 1955:

Shri Ramchandra SINGH ... Mundari.
,, Bhabendra NARZI ... Bodo.

Autumn School 1955:

Shri Atram GANGU ... Gondi.
,, Atram LACCHU ... Gondi.
,, Tekam KHATTI ... Kolami.
,, Ramachandra SINGH ... Mundari.

Summer School 1956:

Shri A. R. SAILO ... Lushai.
,, J. T. KHOT ... Koli.
,, S. G. SHINGDE ... Warli.

TABLE No. 5

Table showing Students of the Four Linguistic Schools distributed according to their Mother-Tongue

S. No.	Languages	Winter 1954	Summer 1955	Autumn 1955	Summer 1956	Total
1.	Assamese	4	4	1	6	15
2.	Bangru	—	—	1	—	1
3.	Bengali	3	8	3	8	22
4.	Bhojpuri	—	3	2	—	5
5.	Chiki Chiki Boli	—	—	1	—	1
6.	English	1	—	—	—	1
7.	Gujarati	5	21	5	7	38
8.	Hindi	8	18	12	26	64
9.	Khariboli (Hindi)	1	1	—	—	2
10.	Kannada	8	17	11	10	46
11.	Kashmiri	1	1	1	1	4
12.	Konkani	1	—	—	1	2
13.	Magadhi	1	—	—	—	1
14.	Magahi	1	—	—	—	1
15.	Maithili	2	—	1	—	3
16.	Malayalam	3	5	1	6	15
17.	Marathi	13	51	25	36	125
18.	Nepali	1	—	—	—	1
19.	Oriya	3	7	—	6	16
20.	Punjabi	1	1	5	2	9
21.	Rajasthani	—	—	2	—	2
22.	Sindhi	1	—	1	—	2
23.	Sinhalese	1	—	—	—	1
24.	Tamil	5	10	6	17	38
25.	Telugu	9	7	2	9	27
26.	Tulu	—	2	—	—	2
27.	Urdu	3	5	2	6	16
	Total	75	162	81	142	460

TABLE No. 6.

Table showing students of the first four Linguistic Schools distributed according to the States of India and the neighbouring countries.

Sr. No.	Name of the State.		Winter 1954	Summer 1955	Autumn 1955	Summer 1956	Total
1.	Andhra	..	4	5	1	3	13
2.	Assam	..	4	4	—	6	14
3.	W. Bengal	..	4	5	3	8	20
4.	Bhopal	..	—	1	2	—	3
5.	Bihar	..	6	5	10	3	24
6.	Bombay	..	18	69	32	41	160
7.	Ceylon	..	1	—	—	—	1
8.	Coorg	..	1	1	—	—	2
9.	Delhi	..	4	2	—	2	8
10.	Himachal Pradesh	..	—	—	1	2	3
11.	Hyderabad	..	3	10	1	1	15
12.	Madhya Bharat	..	—	1	2	3	6
13.	Madhya Pradesh	..	2	8	3	5	18
14.	Madras	..	7	8	7	27	49
15.	Mysore	..	7	15	7	7	36
16.	Nepal	..	1	—	—	—	1
17.	Orissa	..	4	7	—	6	17
18.	Punjab	..	3	—	6	3	12
19.	Rajasthan	..	—	3	1	2	6
20.	Saurashtra	..	1	2	2	6	11
21.	Travancore and Cochin	..	3	4	—	3	10
22.	Uttar Pradesh	..	2	12	3	14	31
	Total	..	75	162	81	142	460

TABLE No. 7.

List of Institutions, etc., deputing their staff for study in schools

1. Annamalai University, Annamalainagar.
2. Bombay University, Bombay.
3. Baroda University (= M. S. University) Baroda.
4. Director, Social Service Department, Government of Hyderabad, Hyderabad.
5. Director of Public Instruction, Chandigarh, Punjab.
6. Director, Department of Anthropology, Government of India, Calcutta.
7. Director of Education, Government of Bombay, Poona.
8. Government of Coorg, Coorg.
9. Gauhati University, Gauhati, (Assam).
10. Karnatak University, Dharwar.
11. Khandesh Education Society, Pratap College, Amalner.
12. Lucknow University, Lucknow.
13. Mysore University, Mysore.
14. Poona University, Poona.
15. Sir Parashurambhau College, Poona.
16. Utkal University, Cuttack, (Orissa).

TABLE No. 8

Alphabetical List of Registrants for the Four Schools of Linguistics in 1954-56

(P = Present)

Sr. No.	Name		Winter 1954	Summer 1955	Autumn 1955	Summer 1956
1.	H. G. R. Adiga, B.A.	..	—	P	—	P
2.	R. P. Agrawal, M.A.	..	P	—	—	P
3.	Smt. Susheela Ambike, M.A.	..	—	P	—	—
4.	M. Annamalai, M.A.	..	—	—	—	P
5.	C. L. Antony, B.A. (Hons.)	..	P	P	—	—
6.	V. B. Arun, M.A.	..	—	—	P	P
7.	G. P. Arya, M.A.	..	—	—	—	P
8.	S. M. Ayachit, M.A.	..	P	—	P	—
9.	S. M. K. Badiuzzaman, M.A.	..	P	—	—	—
10.	Kalicharan Bahl, M.A.	..	—	—	P	P
11.	G. M. Bal, M.A.	..	—	—	P	—
12.	B. C. Balakrishnan, B.A. (Hons.)	..	—	—	—	P
13.	N. Balasubramanya, M.A.	..	P	P	—	—
14.	N. Balusamy, M.A.	..	P	—	—	—
15.	Smt. Gita Bandyopadhyay, M.A.	..	—	P	—	—
16.	S. R. Banerjee, M.A.	..	—	P	—	—
17.	G. S. Banhatti, M.A.	..	P	P	—	P
18.	S. N. Banhatti, M.A.	..	—	—	—	P
19.	P. V. Bapat, M.A., Ph.D.	..	P	—	—	—
20.	V. V. Bapat, M.A.	..	—	—	—	P
21.	L. S. Baral, M.A.	..	P	—	—	—
22.	N. Beladakere, B.A. (Hons.)	..	—	—	P	—
23.	P. C. Bhandari, M.A.	..	—	—	—	P
24.	K. C. Bhatia, M.A.	..	—	—	—	P
25.	U. S. Bhatnagar, M.A.	..	—	—	—	P
26.	B. N. Bhatt, M.A.	..	—	—	—	P
27.	P. C. Bhattacharya, M.A.	..	P	P	—	—
28.	Smt. Perin P. Bhania, B.A.	..	—	P	—	—
29.	S. S. Bhawe, M.A., Ph.D.	..	—	P	—	P
30.	P. R. Bhupatkar, M.A., B.T.	..	—	—	—	P
31.	H. S. Biligiri, M.A.	..	P	P	P	—
32.	B. K. Borah, B.A. (Hons.)	..	—	—	—	P
33.	Smt. Nirmalprobha Bordoloi, M.A.	..	—	P	—	—
34.	D. G. Borse, M.A., LL.B., B.T.	..	P	P	—	—
35.	C. N. Chakravarti, B.A. (Hons.)	..	—	P	—	—
36.	A. C. Chandola, M.A.	..	—	—	—	P
37.	B. A. Chaugule, M.A.	..	—	—	P	—
38.	S. Chatterjee, B.A.	..	P	—	—	—
39.	J. P. Chaturvedi, M.A.	..	P	—	—	—
40.	R. S. Chaturvedi, M.A.	..	—	P	—	—
41.	Dr. A. C. Chettiar, M.A., Ph.D.	..	—	—	—	P

Sr. No.	Name		Winter 1954	Summer 1955	Autumn 1955	Summer 1956
42.	A. Subbaraya Chetty, M.A.	..	—	—	—	P
43.	Smt. B. S. Chetty, M.A.	..	—	P	—	—
44.	Smt. Nurges P. Chhapyar, B.A.	..	—	P	—	—
45.	K. N. Chintamani, B.Sc., M.A.	..	—	—	—	P
46.	R. V. Chitnis, M.A.	..	—	—	P	P
47.	B. R. Chokshi, M.A.	..	P	—	—	—
48.	Bhaga Giri Roy Chowdhary, B.A.	..	—	—	—	P
49.	Smt. R. Y. Damle, B.A.	..	—	P	—	—
50.	V. P. Dandekar, M.A., Ph.D.	..	—	—	P	—
51.	A. Das, B. Com.	..	P	—	—	—
52.	G. C. Das, M.A.	..	P	P	—	—
53.	Smt. G. V. Davane, M.A., Ph.D.	..	—	P	—	—
54.	B. V. Dave, B.A.	..	—	—	P	—
55.	I. A. Dave, M.A.	..	—	P	—	—
56.	I. R. Dave, M.A.	..	—	P	—	—
57.	J. J. Dave, B.A. (Hons.)	..	P	P	P	P
58.	S. B. De, M.A., B.L.	..	—	P	—	P
59.	D. Jha Deen, B.A. (Hons.)	..	—	—	P	—
60.	S. G. Deoskar, M.A.	..	P	—	—	—
61.	Smt. Kamal Desai, B.A.	..	—	—	—	P
62.	M. G. Desai, M.A.	..	—	—	—	P
63.	B. G. Deshmukh, M.A.	..	—	P	—	—
64.	Dr. M. G. Deshmukh, M.A. Ph.D.	..	—	P	—	—
65.	Smt. K. A. Deshpande, B.A. (Hons.)	..	P	—	—	—
66.	R. D. Deshpande, M.A.	..	—	—	P	P
67.	T. N. Devare, M.A., Ph.D., LL:B:	..	—	P	—	—
68.	V. A. Devendran, M.A.	..	P	P	—	—
69.	Shubhangi Devi, M.A.	..	—	—	P	—
70.	J. D. Dhanal, M.A., B.T.	..	—	—	—	P
71.	V. V. Dharwadkar, M.A.	..	P	P	—	—
72.	M. V. Dhond, M.A., LL.B.	..	—	P	P	—
73.	G. N. Dike, M.A.	..	—	—	P	P
74.	C. K. Dixit, M.A.	..	—	—	—	P
75.	S. Dixit, M.A., Ph.D., D.Litt.	..	—	—	—	P
76.	G. M. Dolke, M.A.	..	—	P	—	—
77.	K. Doraiswamy, M.A.	..	—	P	—	P
78.	Smt. Padma Drona, M.A.	..	—	P	P	—
79.	Chandulal Dubey, B.Sc., M.A.	..	—	—	—	P
80.	Bhabataram Dutta, M.A.	..	—	—	—	P
81	V. A. Gadre, M.A., B.Sc. B.T.	..	—	—	—	P
82.	M. Abdul Gaffar, M.A., LL.B.	..	P	P	P	—
83.	G. S. Gai, B.A., Ph.D.	..	—	—	P	—
84.	R. N. Gaidhani, M.A.	..	—	—	—	P
85.	P. Ganguly.	..	—	—	—	P
86.	C. B. Garg, M.A., B.Sc.	..	—	P	—	—
87.	D. V. Garge, M.A., Ph.D.	..	P	P	—	—

Sr. No.	Name		Winter 1954	Summer 1955	Autumn 1955	Summer 1956
88.	P. T. Ghan, M.A.	..	—	—	—	P
89.	A. M. Ghatage, M.A., Ph.D.	..	—	P	P	—
90.	S. K. Ghosh, M.A.	..	—	—	P	—
91.	M. V. Gokhale, B.A. (Hons.).	..	—	P	—	—
92.	V. D. Gokhale, M.A., B.T.	..	—	P	—	—
93.	G. C. Goswamy, M.A.	..	P	P	P	—
94.	P. G. Goswamy, M.A.	..	—	P	—	—
95.	Upendra Goswami, M.A.	..	P	P	P	P
96.	B. S. Govindarajan, B.A. (Hons.).	..	—	—	P	—
97.	K. G. Gujarathi, M.A.	..	P	—	—	—
98.	S. S. Gupta, M.A.	..	—	P	—	—
99.	Rajeshwar Guru, M.A.	..	—	—	—	P
100.	A. F. Haider, M.A.	..	—	—	—	P
101.	Prof. S. S. Harnam, M.A.	..	—	—	P	—
102.	Smt. M. R. Harshe,	..	—	P	—	—
103.	Dr. R. G. Harshe, B.A., D.Litt.	..	—	P	—	—
104.	D. M. Hatvalne, M.A.	..	—	P	—	P
105.	D. E. Hettiaratchi, M.A., Ph.D.	..	P	—	—	—
106.	R. C. Hiremath, M.A., Ph. D.	..	—	—	P	P
107.	Prof. Siddheshwar Hota, M.A.	..	—	P	—	P
108.	Smt. S. M. Irani, M.A., B.T.	..	—	P	—	—
109.	Smt. Usha G. Ithape, M.A.	..	P	P	—	—
110.	K. D. Iyengar, B.O.L., B.T.		P	—	—	—
111.	S. N. Iyengar, B.A., B.T., M.Ed.	..	—	P	—	—
112.	D. S. Jag, M.A.	..	—	—	P	—
113.	M. B. Jaiswal, M.A.	..	—	P	—	—
114.	Janardan, M.A.	..	—	—	P	—
115.	A. N. Jani, M.A., Ph.D.	..	—	—	P	—
116.	D. Javaregowde, M.A.	..	—	P	—	—
117.	Smt. V. Jayakumari, M.A.	..	—	—	P	P
118.	V. K. Jha, B.A. (Hons.)	..	—	—	P	—
119.	B. J. Jhaveri, M.A., Ph.D.	..	—	P	P	P
120.	L. G. Joag, M.A.	..	—	P	—	P
121.	B. L. Joshi, M.A.	..	—	—	P	—
122.	Prof. L. G. Joshi, M.A.	..	—	P	P	—
123.	N. U. Joshi	..	—	P	—	—
124.	S. H. Joshi	..	—	P	—	—
125.	T. D. Joshi	..	—	P	—	—
126.	B. B. Kachru, M.A.	..	—	P	P	P
127.	B. S. Kahalekar, M.A.	..	—	P	—	—
128.	K. L. Kalani, B.A. (Hons.)	..	—	P	—	—
129.	P. K. Kale, B.A.	..	—	—	—	P
130.	M. S. Kanade, M.A.	..	P	—	—	—
131.	S. R. Kanagalu, B.A. (Hons.)	..	—	—	P	—
132.	S. Kanadappau, B.A.	..	—	—	—	P
133.	Y. S. Kanitkar, M.A.	..	—	P	—	—

Sr. No.	Name		Winter 1954	Summer 1955	Autumn 1955	Summer 1956
134.	N. M. Kansara, B.A.	..	—	—	—	P
135.	S. C. G. Kantawala, M.A.	..	—	—	P	—
136.	Sharma Ram Karan, M.A.	..	—	—	P	—
137.	R. A. Kashyap, B.Sc.	..	—	P	—	—
138.	A. R. Kelkar, M.A.	..	P	P	P	—
139.	Smt. Asha R. Kelkar	..	—	—	—	P
140.	K. S. Kelkar, M.A., B.T.	..	—	P	—	—
141.	Smt. Yamunabai B. Keskar, M.A.	..	—	—	P	—
142.	S. S. Khanwelkar, M.A.	..	—	—	P	—
143.	Krishnappa, B.A.	..	—	—	P	—
144.	B. M. Kulkarni, M.A., B.T.	..	P	—	—	—
145.	Dr. E. D. Kulkarni, M.A., Ph.D.	..	—	P	—	—
146.	L. R. Kulkarni, M.A.	..	—	—	—	P
147.	R. G. Kulkarni, M.A.	..	—	P	—	—
148.	Virendra Kumar, M.A.	..	—	—	P	P
149.	S. D. Laddu, M.A., M.Ed.	..	—	—	P	P
150.	Smt. Suhasini S. Laddu, M.A.	..	—	P	P	P
151.	Smt. S. R. Lakshmi, M.A.	..	—	P	—	—
152.	Smt. S. R. Lalithamma, M.A.	..	—	P	—	P
153.	V. P. Limaye, B.A.	..	P	—	—	—
154.	Z. H. Madani, M.A., Ph.D.	..	—	P	—	—
155.	R. B. Madhekar, M.A.	..	—	P	—	—
156.	Radha Mohan Mahapatra	..	—	P	—	—
157.	M. V. Mahasabde, M.A.	..	—	P	—	P
158.	D. D. Mahulkar, M.A.	..	—	P	—	—
159.	S. S. Majithia, M.A.	..	—	—	—	P
160.	L. G. Mandagere, M.A.	..	—	—	P	—
161.	G. J. Mangalgi, M.A.	..	—	—	P	—
162.	A. G. Mangrulkar, M.A.	..	P	—	—	—
163.	T. S. Manickam, M.A.	..	—	—	—	P
164.	M. V. Maslekar, B.A. (Spl.)	..	—	—	P	—
165.	D. M. Master, M.A.	..	—	P	—	—
166.	W. H. Mauror, B.A.	..	P	—	—	—
167.	K. C. Mehta, M.A.	..	P	P	—	—
168.	M. S. Menon, M.A.	..	—	P	—	P
169.	R. S. Mirza, M.A., Ph.D.	..	—	P	—	—
170.	G. C. Misra, M.A.	..	P	P	—	P
171.	M. M. Misra, B.A.	..	—	—	—	P
172.	N. C. Mishra, M.A.	..	P	—	—	—
173.	P. J. Mistry, B.A. (Hons.)	..	—	P	—	—
174.	Alok Kumar Mitra	..	—	P	—	—
175.	J. B. Mohanty, M.A.	..	—	—	—	P
176.	R. M. Mohapatra, M.A.	..	—	—	—	P
177.	B. P. Moharil, M.A., LL.B.	..	—	P	—	P
178.	C. S. Mohile, M.A.	..	—	—	—	P

Sr. No.	Name		Winter 1954	Summer 1955	Autumn 1955	Summer 1956
179.	M. C. Murthy, B.A.	..	—	P	—	—
180.	A. Muthuswami, B.A. (Hons.) B.L.	..	—	—	—	P
181.	N. Nagappa, M.A.	..	P	P	—	—
182.	A. S. N. Naidu, M.A.	..	—	P	—	—
183.	C. M. Naim, M.A.	..	—	—	P	P
184.	M. K. G. Nair, M.A.	..	—	—	—	P
185.	M. Ramakrishnan Nair, B.A., L.T.	..	P	—	—	—
186.	S. Gupta Nair, B.A. (Hons.).	..	—	P	—	—
187.	V. Krishnan Nair, B.A.	..	—	P	—	—
188.	S. S. Naithani, M.A.	..	—	P	P	—
189.	S. S. Nallepally, M.A.	..	—	—	P	—
190.	K. V. Nambudiripad, M.A.	..	—	—	—	P
191.	L. K. Namjoshi, B.Sc., B.T.	..	—	—	P	—
192.	P. N. Nandy, M.A., B.Sc.	..	—	—	P	—
193.	K. R. Nanjundan, M.A.	..	—	—	—	P
194.	H. S. Ananta Narayan, M.A.	..	—	P	P	P
195.	Narayan Das, B.A.	..	—	—	—	P
196.	N. V. Narayan Rao, M.A.	..	—	—	—	P
197.	Narendra Nath, M.A.	..	—	—	P	P
198.	D. G. Natu, M.A.	..	—	—	P	P
199.	Smt. V. S. Navalkar, M.A., Ph.D.	..	—	P	—	—
200.	P. D. Navathe, M.A.	..	—	P	—	—
201.	G. V. Nerlekar, M.A.	..	—	P	—	P
202.	V. R. Nimkar, B.A., B.T.	..	—	—	—	P
203.	R. K. Ojah, M.A.	..	—	—	—	P
204.	S. N. Ojah, M.A.	..	—	—	—	P
205.	M. B. Omer, M.A.	..	—	P	—	—
206.	V. Pilani, M.A.	..	—	—	—	P
207.	R. M. Pancholi, M.A.	..	—	P	—	P
208.	Indraprakash Pandey, M.A.	..	—	P	P	—
209.	G. K. Pandit, M.A., LL.B.	..	—	—	—	P
210.	M. D. Pandit, M.A.	..	—	P	—	P
211.	K. T. Pandurangi, B.A. (Hons.).	..	—	P	P	—
212.	M. G. Pande, B.A., Ph.D.	..	—	P	—	—
213.	A. D. Pant, M.A.	..	—	P	—	—
214.	V. K. Panthalu.		P	—	—	—
215.	V. W. Paranjape, M.A.	..	—	P	—	—
216.	N. R. Parasnis, M.A.,B.T.	..	—	P	—	—
217.	J. J. Parekh, B.A.	..	—	P	—	—
218.	S. D. Parekh, M.A., M.Ed.	..	—	—	—	P
219.	Smt. Indu G. Phatak, M.A.	..	—	P	—	P
220.	Nanda Lal Pathak, M.A.	..	—	—	P	—
221.	Y. M. Pathan, M.A.	..	—	P	P	—
222.	G. M. Patil, M.A., LL.B., Ph.D.	..	—	P	P	P
223.	D. P. Pattanayak, M.A.	..	P	P	—	—

Sr. No.	Name		Winter 1954	Summer 1955	Autumn 1955	Summer 1956
224.	I. S. Pawar, B.A. (Hons.)	..	—	—	P	—
225.	K. V. Peshkar, M.A.	..	—	P	—	—
226.	H. V. Phadke	..	—	—	—	P
227.	S. N. Keshava Pillai, B.A. (Hons.)	..	P	P	—	—
228.	A. Ramaswamy Pillai, M.A.	..	—	—	—	P
229.	M. S. Pillai, M.A.	..	—	P	P	—
230.	M. N. Poojari, M.A.	..	—	P	—	P
231.	K. R. Potdar, M.A.	..	—	P	—	—
232.	Smt. Swarnalata Prasad, M.A.	..	P	—	P	P
233.	S. M. Prasad, M.A.	..	—	P	—	—
234.	Dr. Rabinandan Pratap, M.A.	..	—	P	P	—
235.	P. N. Pushp, M.A.	..	P	—	—	—
236.	M. H. K. Qureshi, M.A.	..	—	—	P	P
237.	G. Radhakrishna	..	—	—	—	P
238.	K. V. Raghavachar, M.A., B.T.	..	P	P	—	—
239.	R. D. Raizada, M.A.	..	—	—	P	—
240.	N. Kumaraswamy Raja, B.A.	..	—	—	—	P
241.	Smt. V. Rajam, M.A.	..	—	—	P	P
242.	S. Mariya Rajamani.	..	—	—	—	P
243.	K. Rajaseshagiri Rao, M.A.	..	—	P	—	—
244.	Guru Rajeshwar, M.A.	..	—	—	P	—
245.	Smt. Vedula Rajeswari, B.A.	..	—	P	—	—
246.	S. Rajguru, B.A.	..	—	—	—	P
247.	S. Rajpurohit, M.A.	..	P	—	—	—
248.	Smt. S. Ramachandran, B.A. (Hons.).	..	—	—	P	—
249.	S. Ramachari, B.A. (Hons.).	..	P	—	—	—
250.	B. V. Ramana, M.A., L.T.	..	P	P	—	—
251.	S. K. Ramanna, M.A.	..	—	P	—	—
252.	J. K. Ranade, M.A., B.T.	..	—	P	—	—
253.	Smt. Neela K. Ranade, M.A.	..	—	—	P	—
254.	M. R. Ranganatha, M.A.	..	—	—	—	P
255.	V. V. Ranganathan, M.A, B.T., M.Ed.	..	—	P	—	—
256.	M. V. Rao, B.A. (Hons.).	..	—	P	—	P
257.	Motilal Rastogi, M.A.	..	—	P	—	—
258.	Rajkeshore Rastogi, M.A.	..	—	P	—	—
259.	Smt. S. Ratnamma, M.A.	..	—	P	P	P
260.	R. K. Raval, M.A.	..	—	P	—	—
261.	R. T. Raval, M.A., B.T.	..	—	P	—	—
262.	C. B. Rawat, M.A.	..	—	—	—	P
263.	P. Sinha Ray, M.A.	..	P	P	—	P
264.	G. N. Reddy, B.O.L., M.Litt.	..	P	—	—	P
265.	Smt. Savitri Rout, M.A.	..	P	P	—	—
266.	Rajkishore Roy.	..	—	P	—	—
267.	M. L. Sachdeva, B.A.	..	—	—	—	P
268.	R. Sadasivan.	..	—	—	—	P

Sr. No.	Name		Winter 1954	Summer 1955	Autumn 1955	Summer 1956
269.	V. Sadasivan.	..	—	—	—	P
270.	R. Sahai, M.A.	..	P	—	—	—
271.	Jagabandhu Sahoo, M.A.	..	—	—	—	P
272.	K. C. Sahoo, M.A.	..	—	P	—	—
273.	Smt. Rama Saksena, M.A.	..	P	—	—	—
274.	S. V. Sampath, M.A.	..	—	—	—	P
275.	K. S. R. Sarma, M.A., M.O,L,, M,Ed,	..	P	P	P	—
276.	A. Q. Sarvari, M.A. LL.B.	..	—	P	—	P
277.	K. Mahadeva Sastry, M.A.	..	—	—	P	—
278.	K. Sivaramakrishna Sastry, M.A.	..	P	—	—	—
279.	M. R. Sastry, M.A.	..	—	P	—	—
280.	N. S. Sastry, M.A.	..	—	P	—	—
281.	Smt. S. A. Sathe, M.A.	..	—	P	—	—
282.	Dr. Satyandra,	..	—	—	—	P
283.	Smt. R. Seethabai, B.A. (Hons.).	..	—	—	—	P
284.	S. K. Sen	..	—	P	—	P
285.	Smt. Sunanda Sen, B.A. (Hons.).	..	—	P	—	P
286.	Smt. Sunita Sen.	..	—	—	—	P
287.	B. K. Sengupta, M.A.	..	—	—	P	P
288.	Smt. A. L. Shah, B.A. (Hons.).	..	—	P	—	—
289.	Smt. Sita Shahani, M.A.	..	—	P	—	P
290.	R. Shanmugam.	..	—	—	—	P
291.	V. S. Shanmuga, B.A. (Hons.).	..	P	—	—	—
292.	S. N. Shantheveerappa, M.A.	..	P	P	—	—
293.	Dr. B. R. Sharma, M.A., Ph.D.	..	P	—	—	—
294.	K. Sharma, M.A.	..	P	—	—	—
295.	K. L. Sharma, M.A.	..	—	—	—	P
296.	P. D. Sharma, M.A.	..	—	—	P	P
297.	R. K. Sharma, M.A.	..	—	—	—	P
298.	R. V. Sharmah,	..	—	P	—	—
299.	K. G. Shastri, M.A.	..	P	—	—	—
300.	G. R. Shende,	..	—	—	P	—
301.	R. G. Shinde, M.A., LL.B.	..	—	P	P	—
302.	D. S. Shruti,	..	P	—	—	—
303.	Dr. B. K. Shukla, M.A., Ph.D.	..	—	—	—	P
304.	Smt. Urmila Shukla, M.A.	..	—	—	—	P
305.	Dr. Fateh Singh, M.A., D.Litt.	..	—	P	—	—
306.	Gulwant Singh, M.A., M.O.L.	..	P	—	—	—
307.	Jag Deva Singh, M.A.	..	—	—	P	P
308.	Namwar Singh, M.A.	..	—	P	—	P
309.	Rajkishor Singh, M.A.	..	—	—	—	P
310.	Ram Singh, M.A., Ph.D.	..	—	P	—	—
311.	R. K. N. Singh, M.A.	..	P	—	—	—
312.	S. P. Singh, M.A.	..	—	—	P	P
313.	V. V. Singh, B.A.	..	—	P	P	P
314.	B. D. Sinha, M.A.	..	P	—	—	—

Sr. No.	Name	Winter 1954	Summer 1955	Autumn 1955	Summer 1956
315.	B. L. Sinha, M.A. ..	—	—	—	P
316.	R. K. Sinha, M.A. ..	P	P	P	—
317.	G. Sitaramaiah, M.A. ..	—	P	—	—
318.	H. J. Sivasankarappa ..	—	—	—	P
319.	G. D. Solanki, M.A. ..	—	—	—	P
320.	K. G. R. Somanahally, M.A. ..	—	—	P	—
321.	Dayanand Srivastav, M.A. ..	—	—	—	P
322.	K. Subbaramappa, M.A., B.Ed. ..	—	P	—	P
323.	N. S. Subramanyam, M.A. ..	—	P	—	—
324.	S. V. Subramaniam, B.A. (Hons.) ..	—	P	—	P
325.	S. M. Sudarshan, M.A. ..	—	—	P	—
326.	J. Suryanarayana ..	—	—	—	P
327.	A. T. Muthu Swamy, B.O.L., B.T. ..	P	—	—	—
328.	Narayana Swamy, C.R., B.A. (Hons.). ..	—	—	P	—
329.	P. Palani Swamy ..	—	—	—	P
330.	S. D. Swami, M.A. ..	—	P	—	—
331.	G. V. Tagare, M.A., Ph.D. ..	—	P	—	—
332.	V. N. Tangirala, B.A. (Hons.) ..	P	—	—	—
333.	G. H. Tarlekar, M.A., B.T. ..	—	P	—	—
334.	S. R. Tatti, B.A. ..	P	—	—	—
335.	N. C. Tembhekar, M.A. ..	—	P	P	—
336.	B. N. Tewari, M.A. ..	—	P	—	—
337.	L. N. Tiwari, M.A., LL.B. ..	—	—	P	—
338.	D. Thoomati, B.A. (Hons.) ..	P	—	—	—
339.	H. K. Todmal, M.A. ..	—	P	—	—
340.	Sikander Toufiq, M.A. ..	—	P	—	—
341.	H. S. Tripathi, M.A. ..	—	P	—	—
342.	Smt. Ramkumari Tripathi, M.A. ..	—	—	—	P
343.	B. B. Trivedi, M.A. ..	—	P	—	—
344.	J. G. Trivedi, B.Sc., M.A. ..	P	—	—	—
345.	G. P. Upadhyaya, M.A. ..	—	—	—	P
346.	A. N. Upadhye, M.A., D.Litt. ..	—	P	—	—
347.	P. W. Urdhwareshe, M.A. ..	—	—	P	P
348.	V. R. Vaidya, M.A., B.T. ..	—	—	—	P
349.	N. M. Valand, M.A. ..	—	P	—	—
350.	Prof. S. G. Valimbe, M.A. ..	—	P	P	—
351.	Veerabhadraiah, H.M., M.A. ..	—	—	P	—
352.	K. Venkatachalam, M.A. ..	—	P	—	—
353.	Dr. C. S. Venkataswaran, M.A., Ph.D.	—	—	—	P
354.	B. B. Verma, M.A. ..	P	—	—	—
355.	Smt. S. Vinodabai, M.A. ..	P	—	—	—
356.	K. B. Vyas, M.A. ..	—	P	—	—
357.	Smt. Prema V. Warnmali, M.A. B.T. ..	—	—	—	P
358.	N. V. Krishna Warrior, M.A., M.Litt ..	—	—	—	P
359.	S. L. Yadav, M.A. ..	P	—	—	—
360.	V. V. Yardi, M.A. ..	—	—	—	P
361.	Mohammed Zakir, M.A. ..	—	—	—	P

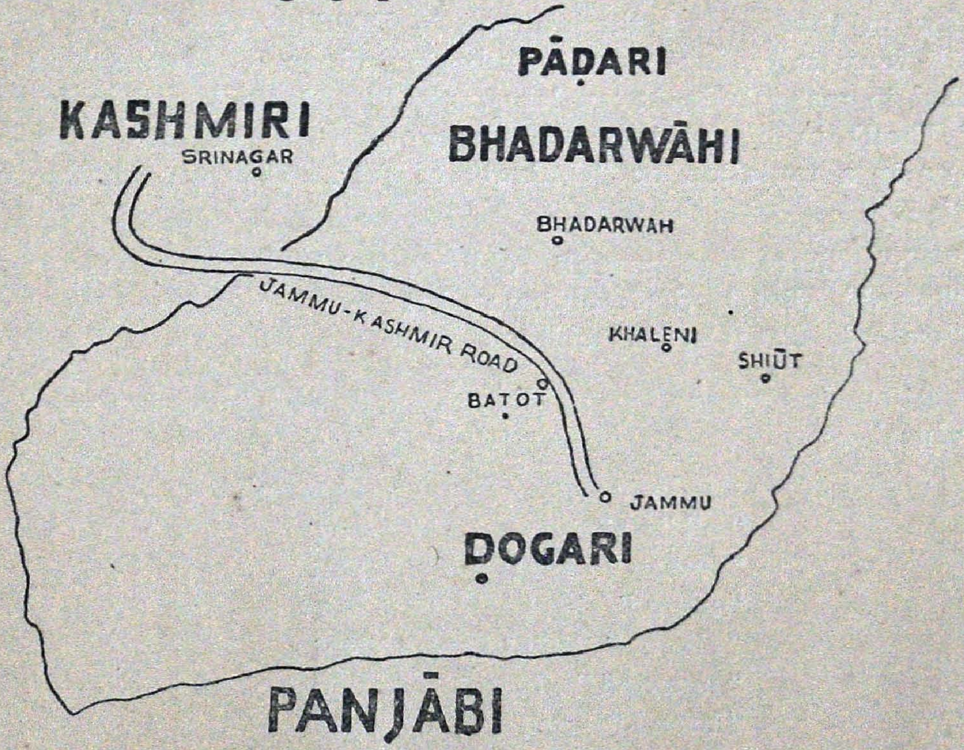
THE SHIŪṬĪ DIALECT OF NORTH-WEST PAHAṚĪ

By

Siddheshwar VARMA, *New Delhi*

During the present writer's second linguistic expedition to the Kashmir Himalayas, conducted in 1930, it was communicated to him by some of the coolies engaged by him, that the language of a village, officially called Siūṭ (but by the inhabitants themselves Shiūṭ) was quite unintelligible to them, though it was situated only about 10 miles from their habitats. The access to this village was extremely difficult, so that in some places, on the way, even cows could hardly pass. Nevertheless the writer, with the party, managed to reach the village, though, in one spot, they had to walk on all fours!

The village consisted only of 11 houses, the total number of speakers being estimated between 40 and 50. This hamlet belonged to the estates of a petty Raja, called the Raja of Chineni, who explained subsequently to the present writer that the linguistic isolation of this village had been due to nine months' continues snowing there, so that for most of the year this locality used to be entirely cut off from the adjoining territories. The following sketch will show the geographical situation of this village.



From the above sketch it will appear that the village Shiūṭ is about 125 miles to the North-east of Jammu.

A communication of this dialect was already made by the present writer in his article in J.R.A.S. Bengal, Letters, Vol. IV, 1938, Article No. 1, p. 3.

The striking feature of the dialect lay, not in its vocabulary, which hardly differed from that of the adjoining areas, but in pronunciation. The syncopations and mutations of individual words were so amazing that in connected speech they assumed even still more baffling forms. The greatest havoc on these phonetic changes was caused by gender, particularly by feminine plural, which presented curious deviations from the norms in the neighbouring dialects.

The following phonetic data will illustrate the notable trends of this dialect —:

I. Mutation due to final vowel [ī]—:

Like most of the languages of New Indo-Aryan, this dialect has only two cases, viz. direct and oblique. Now if the direct case ends in [ī], the stem-vowel of the oblique case shows a transformation. Thus, for "elephant", the direct case has [hātī], but the oblique case has [hetī]. The neighbouring dialect Khashālī fortunately presents to us the preceding stage of this oblique form, for in that dialect the oblique is [heitī]. This [i] in [ei] of the Khashālī form is evidently an epenthesis, influenced by the final [ī], as is paralleled in many Indo-Aryan languages like Bengali, and in Iranian. The [e] of [hetī] in Shiūṭi is much closer than [e] of [heitī] in Khashālī, and thus is a mutation or "Umlaut" of [ei]. Compare similar examples in Śuiṭī —:

"fish" direct case machlī, oblique michlī
"beard" direct dâṛī oblique dīṛī
"water" direct pāṇī oblique pīṇi

II. Mutation due to gender, as illustrated by the following words in fem. plural —:

	Fem. sg.	Fem. pl.
"all"	sārī	sīrī
"queen"	rāṇī	rīṇī
"mare"	koṛī	kuṛī
"clever"	siāṇī	sīṇī
"married"	biâorī	bêurī
"broad"	ceṛī	cīṛī
"mother"	mâlī	mīlī
"went"	gâdī	gīdī

"eats"	khā̃dī	khī̃dī
"does"	gettī	gittī̃
"comes"	êdī	ī̃dī̃
"shall be"	bhôlī	bhûlī
"will go"	gâslī	gîslī
"will die"	mârlī	mîrlī
"ate"	khāi	khī̃
"came"	āi	ī̃
"made to drink"	plıāi	plī̃

That such mutations become all the more baffling to the hearer when used in connected speech, will be appreciated if some of the above words are put in connected speech. Thus —:

"his mother struck me"	[tī̃ria mī̃lia aū̃mārā]
"may all be queens"	[sīrī rīṇī poṇ]

Conclusion

The above study, it may be presumed, has given us the following points —:

(1) The Shiūṭī dialect is a remarkable example for the scientific study of language "in air-pump", that is to say, if a linguistic region is left entirely to itself, it is likely to evolve phonetic rather than lexicographical variations.

(2) Evidently a single example is far from being adequate for driving us to a definite conclusion. It is therefore necessary that a copious number of such isolated areas be investigated, in order to enable us to arrive at safe results.

PHONETIC TRANSCRIPTIONS IN THE HISTORICAL AND COMPARATIVE STUDY OF INDIAN LANGUAGES

By

Suniti Kumar CHATTERJI, *Calcutta*

The basis of language is the spoken word. The written form of it of course has its value from various aspects, particularly from the historical context, but in the last resort it is based on the spoken word (except where the written form seeks to picture or symbolise the idea behind the word and not its phonetic representation as it affects the ear). It was this phonetic aspect, this auricular basis of the word as the component of language, which was insisted upon by Patañjali in his *Mahābhāṣya* (2nd cent. B.C.) when he declared that *pratīta-padārthako dhvaniś śabdaḥ* 'the sound by which an object is made out is the word,' and further, more pithily, *tasmād dhvaniś śabdaḥ* 'therefore, the sound is the word.'

In learning a language, where we are more interested in reading and understanding and writing it than in speaking it, we are accustomed to pay greater attention to the written word than to the spoken one. The acquirement of classical languages which dominated the last so many centuries in the educational systems of different countries was generally tolerant of bad pronunciation, as diversity of pronunciation was universally recognised, but would not condone wrong spelling. "Orthography" was the first step of grammar, consequently, and attention to orthoëpy or right pronunciation was haphazard and secondary, the student being left to his own devices, by imitating good pronunciation as best as he could. When the teaching of modern languages which were to be acquired for both speaking and writing gradually came to take an importance which was increasing with the years, attention to the spoken word had to be paid, and the Science of Phonetics, to which students of language felt drawn inevitably from the fourth quarter of the last century, came to the assistance of language teaching as soon as it became established in its own right. The tentative experiments and advances made by investigators and scholars like BELL and SWEET and JESPERSEN during the last century placed the Modern Science of Phonetics on a sane objective basis, and the contribution made by the ancient Indian phoneticians (indirectly through Sanskrit studies) came also to give it the value of a tradition.

Phonetics has now largely come to its own, not only as an independent subject but also as ancillary to linguistic study and investigation. Different

groups of scholars in the various advanced countries have taken up the task of devising a suitable all-inclusive set of symbols — a comprehensive phonetic script — for all the various sounds occurring in human speech. Some of these phonetic scripts, like SWEET's, for example, are absolutely new creations, without any reference to any of the existing alphabets. Others have sought to build up phonetic scripts on the basis of the Roman alphabet. Experience has shown that a totally new system of writing, however reasonably conceived and artistically executed, generally fails in its purpose — the total newness of the symbols becomes the inherent and insuperable disqualification for the acceptance of such a newly conceived phonetic alphabet. The scripts on a Roman basis are more easily acceptable, and some of them have become quite popular too.

Phonetic research and study have now advanced far enough towards standardisation and universalisation, and it is now time that a single standardised system in the representation of the sounds of language, a sort of Universal Phonetic Script, be adopted by all workers in phonetics and linguistics all over the world. The importance of an internationally accepted set of symbols for any science will be admitted by all, and this point need not be stressed. Without this, science suffers from a severe handicap in its progress through individual as well as international co-operation. The same symbols and figures in Mathematics, in Chemistry, in Physics and other physical sciences have made international advance a matter of course. In certain other sciences, the adoption of a common set of symbols is also becoming an acknowledged necessity, e.g. in Biology. Certain symbols, borrowed in some cases from Mathematics, for example, are being employed internationally in Linguistics: e.g. =, √, >, <, and * † meaning respectively a cognate or a semantic equation, a verbal root, progress in sound or sense towards, descent from, and a hypothetical form, and a moribund or dialectal word as an alternative or allowable sound or form, etc.

Speech sounds form the basis of language. It is strange that with nearly a century and a half of history behind it, the linguistic science has not as yet adopted a universally accepted set of symbols to indicate the sounds of speech. In Chemistry, the elements which go to make up this physical world have got their symbols, Au, Na, O, H, K, Fe, Cl, etc., which for scientists all over the world stand respectively for Gold, Sodium, Oxygen, Hydrogen, Potassium, Iron, Chlorine, etc. We are speaking here of International Symbols, not of International Technical Terms, which with the languages of the world grouping themselves as those of Greco-Latin, or Germanic, or Slav, or Indo-Aryan (Sanskrit), or Semitic (Arabic), or Sinio inspiration, will be impossible of achievement, — the imposition of a few words of Greco-Latin or Pure English origin through the predominance of English

(or Anglo-American) can hardly be called an international employ of a particular set of technical terms.

The Roman alphabet as used for the languages of Western Europe, through which the greatest advance in Science has been made in the present age, has been a very great blessing. In instituting linguistic research through the comparative method, its utility and convenience was not understood at once. Franz Bopp brought out his *Comparative Grammar of the Indo-European Languages* over a century ago, and he used over half-a-dozen different scripts — Devanāgarī (for Sanskrit), Persian, Avestan, Greek, Armenian, Cyrillic, Irish and Gothic, in addition to Latin. At the present day, transcriptions into Roman have made for students of linguistics the learning of so many scripts unnecessary, and Roman and Greek (for Greek words) are the only scripts which feature in works on Linguistics; and there is a tendency, a very sane one which is noticeable, to transcribe Greek words also in the Roman script. Accepting the Latin and Italian values of the Roman letters, and extending the Roman alphabet by means of a few dotted and capped and otherwise modified letters, satisfactory systems of Romanisation have been gradually evolved for most languages — including not only those of the Indo-European family but also languages of other speech families like the Semitic, the Sino-Tibetan, the Ural-Altaic, the Bantu and the rest.

This was mostly the work of professed students of Linguistics who occupied themselves with the languages of one or more particular families. In their hands, quite a number of extended types came into being to meet the requirements of individual languages and scripts. As it was mostly a case of each worker tilling his solitary furrow, there was not much co-operation, consultation or co-ordination: there was either a wide or general acceptance of new symbols suggested by one investigator (in the shape of modified Roman letters), or there were alternative letters proposed, adding to the number in this way. But there was a tacit understanding among serious workers in Linguistics to base their new letters on those of the Roman alphabet as far as practicable, and not to go in for totally new and fancy characters.

Thus a varied and a copious extension of the Roman alphabet came into being in the wake of the progress of the linguistic science; and individual workers who were not satisfied with the wide choice offered by the ever-increasing progression of dotted and capped letters could go in for a few more. With money for new types forthcoming, the type cutters were ready to serve the demands of scholarship. But the number became unmanageable for all but only highly specialised presses. These extended or modified letters were at the outset for indicating various letters of alphabets like the Arabic,

Armenian, Devanāgarī, Cyrillic and the rest; then they were taken recourse to denote differences in sound also within the same language, and even at times were made to suggest some phonological history behind a letter or the sound it represented at a given stage in the history of the language.

Typographical difficulties prevent us from giving specimens of the various modified (dotted and capped) letters that are in use among students of linguistics. Lack of co-ordination through General Phonetics, and also of a single Phonetic Script accepted by all (certain difficulties in the matter of having a single script for all languages, although the script is based on the Roman, have to be admitted, particularly when there is to be considered the need to transliterate the original alphabet), has resulted in the multiplicity of symbols. Thus a nasalised vowel (ẽ) or (õ) for instance, is indicated in the follolwing ways

[eṉ, eṃ, ẽ̆, ę] or [oṉ, oṃ, õ̆, ǫ]

and the symbols [ę ǫ], again, indicate not a nasalised vowel at all in an old fashioned transcription of Old English or Anglo-Saxon, but they just indicate respectively an [e] sound which has been derived from an earlier [a] through Umlaut (harịa > hęrę *manniz, *manni > męnn) and an [o] sound which is from an earlier [a] occurring before a nasal (land > lǫnd, mann > mǫnn, lamb > lǫmb). The Palatal *stop* sounds are represented in various ways — [k, g; ky, gy; kj, gj; ty, dy; tj, dj; ḱ, ǵ; ť, d′]; and the Palatal *affricate* sounds are denoted by [ȓ, ĝ; ḱ, ǵ; kj, gj; tš, dž; č, ğ] besides the different ways of representing these sounds in various European languages employing the Roman script, like (*ch, j*) as in English, (*tch, dj*) in French, (*tsch, dsch*) in German, (*cs, ds*) in Magyar, (*ç, c*) in Turkish, (*cz, dź*) in Polish, etc.

It would not be easy now entirely to do away with the current 'scientific' Roman transcriptions which have been in use for Indo-Aryan (Sanskrit, Pāli, Hindi, etc.) as well as the Dravidian languages, for Iranian (Avestan, Old Persian, Pahlavi or Middle Persian, New Persian), for Armenian, for Church Slav and other forms of the Slav speech, for Arabic and the rest. For Romanised Chinese we would do better in abandoning the Wade system and adopting the Gwo-yeu, which has the great advantage of including the representation of the tones along with the vowel and consonant sounds; and the Japanese National Romazi should similarly replace the practical if inconsistent (from the point of view of Japanese *kana* writing) Hepburn system. For Vietnamese, the current Romanisation should be retained. For Indonesian (Malay), a system steering clear of the inconsistencies of both the English and Dutch orthographies, and agreeing more with

the Indo-Aryan (though matters of detail are not necessary) should be adopted: a language which is going to serve some 75 millions of humanity as its national language deserves a consistent system, when it has voluntarily adopted the Roman script. The Romanisation adopted in the Tamil Lexicon of the University of Madras for Tamil is about the best, although I would suggest substituting [ḻ] by [ẓ]. For Mon (Talaing) and Burmese, the strict Romanisation proposed by BLAGDEN and DUROISELLE should be adhered to — the modern pronunciation being indicated by means of the ordinary Roman transcription which we find in Modern Burmese personal names, place names and words (the transliteration or the transcription within brackets, according to the context), or better by means of proper phonetic transcription (with the International Phonetic Association Script). An analogous system for Siamese should be adopted. Ordinary Tibetan Romanisation seeks to combine both the historical spelling and modern pronunciation, and we should always have the two together for linguistic work — the transliteration, followed by modern pronunciation (in the standard speech or in the dialects).

The transcription of the written word, however, does not solve the problem, but it is a great help in historical linguistics, presenting an ideal or static aspect of the language at a particular epoch. But a much needed reform is in the matter of indicating the sounds of Primitive Indo-European, and the still more ancient "Indo-Hittite." Here the absence of a consistent system which is universally accepted becomes a source of much confusion, particularly to novices and to those who have no grip over phonetics and phonetic scripts. Some of the accepted technical terms also require revision. Thus, the sounds which are described as "Palatals" by most authorities on Indo-European are not really "Palatals" as we understand for modern speeches, and even for Sanskrit: they are just Velar sounds which are slightly advanced when they occur before the front vowels — they are "hard" sounds like the English *c* in *cot* or *k* in *kid* and *g* in *got* and in *give*. They are not the pure palatal stops which we hear. Burmese (ky, gy in ordinary Roman transcription) or in dialectal English (as in *kid*, *gaiety*), and which were the old values of the Sanskrit. Similarly the "Velar" sounds of Indo-European should be described as Uvulars: [q qh ɢ ɢh]. Scholars engaged in Indo-European researches should come to an agreement about the symbols to be employed for these so-called "Palatals" which are really Velars: (k, ḱ, k_1, g, ǵ, g_1) are used for these, and [q, k, ɢ, g] are used for the so-called "Velars" (really Uvulars), and the "labialised Uvulars" are denoted by [k^v, q, q^w; g^v, ɢ, $ɢ^w$). Then, again, vocalised r, l, m, n etc. are denoted by [r̥ l̥ m̥ n̥], which are apt to get confused with the retroflex [ṛ ḷ ṇ] and the anusvāra of Sanskrit [ṃ]: [r̥ l̥ m̥ n̥] stand for the unvoiced [r l m n] in the alphabet of the International Phonetic Association, in which a small circle

below stands for devoicing. I make a suggestion that for representing the sounds of Primitive Indo-European, Primitive Semitic, Primitive Sino-Tibetan and other reconstructed speeches, we adopt in general the alphabet of the International Phonetic Association. The employment of the letters of this alphabet is precise and clear: the alphabet is all-inclusive: and the phonetic analysis on which it stands is the most scientific and up-to-date.

At the present day, the position which the International Phonetic Association has attained in the Science makes its alphabet the most suitable means for indicating the sounds of language at any given period in its history and among any particular community or section of the people. It is not, of course, a perfect system, as no human device can be perfect: but it is the best of all the systems that are current now, generally speaking. A greater use of it is to be made of phonetic transcriptions in this system for linguistic work. Thus Vedic Sanskrit as it was spoken at the time of the redaction of the Vedic hymns into the four Veda books (c. 950 B.C., according to the date proposed by PARGITER and by H. C. RAY CHAUDHURI separately, and supported by L. D. BARNETT) certainly differed in pronunciation from Vedic of some centuries earlier, and from Classical Sanskrit as it was taking shape as a literary language when Pāṇini wrote its grammar some five centuries later (c. 450 B.C.); and the Prakrit dialects of c. 200 A.D. were similarly very different in their articulation from Prakrit dialects of say 600 A.D. All these could not be properly understood from simple transliterations of passages from the *Veda,* from the *Mahābhārata,* from a 3rd century B.C. inscription of Aśoka, from the Prakrit portions of the *Mṛcchakaṭika.* Similarly for all the periods of Indo-Aryan and in different parts of the country. Mere transliteration from the Tamil script in the same manner will not give us any idea of the unfolding of the phonetic history of Tamil from a sequence of texts from Old Tamil of the Sangam age, from Middle Tamil of the time of Meykanda Devar and Tayumanavar, and from Modern Tamil, down to the extremely colloquial speech of the present day where a large scale elision of interior consonants is leading the language to a newer stage of development. Phonetic transcriptions, and that, too, in an alphabet which does not permit any confusion, thus become a *sine qua non* for any investigation which can have an objective value.

To give one or two striking examples. An Old Indo-Aryan word like *kathayati* (कथयति) has become in Modern Bengali *kay* (कय) or one like *yoga* (योग) has become Bengali *jo* (जो). The full history of the development cannot be had from the successive forms as they are given by Prakrit and Early Bengali, which can be denoted by the Devanāgarī script as कथयति, कथेति, कधेदि. कहेइ, कहइ, कहे and कय, and as योग, योग, जोअ, जो. But a series of phonetic transcriptions of the successive stages, preferably

in a finished phonetic alphabet like that of the IPA, makes the line of change exceedingly easy to follow:

[kathajati > k^thæjti > k^the: ti > k^dhe: di > kʌδɦe: δi > kʌɦ^ï > kɒɦæĕ > kɔ́ɦɛ > kɔ́ɦe > kɔ́é > kɔ̀ĕʃ]

[ĭauga > jauga > jo: g^ > ʒo: γʌ > ɟʒo: γə > ɟʒo: ə > ʃʒo:]

To arrive at each of the above stages in the line of development, a thorough appreciation of the phonetics of the language from period to period becomes imperatively necessary; and a full alphabet (with symbols for all characteristic sounds) such as is presented by the one adopted by the IPA. becomes a natural help in work of this kind. We all know that the first letter of the Sanskrit alphabet the short vowel *ă* had two pronunciations in ancient time, one the older, more open [*a*] as the proper short of the long vowel [*ā*], the *vivṛta* or open pronunciation, and the other was a close pronunciation, a *saṃvṛta* one, which was like that obtaining in Northern India in accented syllables at the present day, the sound as in English *cut, hut, son.* The last sūtra of Pāṇini is not capable of being understood unless the commentary came to our rescue, and told us that what is in practice, i.e. in actual pronunciation in the *laukika bhāṣā* of Pāṇini's time but a close (*saṃvṛta* ă, [^] in the IPA. script), is to be considered for grammatical purposes as an open, *vivṛta* [*a*] ([*a*] in the IPA. script). In other words, the old value of अ ă as a wide or open vowel (*a*) in Vedic had changed to a close vowel (^) in Pāṇini's time, and this was an important fact of historical Phonology to which Pāṇini was fully alive, but which was obscured by the alphabet of Pāṇini not having two symbols for it.

The Aryan speech was first written down probably in the 10th century B.C., when a modified form of the later, linear and alphabetical development of the pre-Aryan Harappa and Mohen-jo-Daro script was adopted for it. The employment of an alphabet to write the language alone could make the compilation of the mass of hymns and ritual formulae current among the priests of the Aryan speakers into the four Veda books possible through the labours of a great literary conserver like Kṛṣṇa Dvaipāyana Veda-vyāsa; and it was equally the adoption of writing that made it possible for Veda-vyāsa and his disciples to start the collection of mythical and historical traditions current among the Aryan-speaking or Aryan-using Hindu people, of *mixed* Aryan-non-Aryan origin, of c. 10th century B.C. into the primitive Purāṇas and in the ballads of the Ur-Mahābhārata. At first, the writing of the Vedic hymns and other literature in an Aryan language was only a tentative thing. The orthography of Sanskrit could not have come into being as a perfect thing at one bound, and it was the result of centuries of close study and observation and grammatical analysis that the perfect system of spelling of Sanskrit came gradually to be fixed. We can see from the Aśoka inscriptions

that the orthography was not yet a perfect one — it was in many matters a very hestitating, make-shift system. Thus in Aśokan Brāhmī, and later too, the double consonants were not indicated properly — a word like *vassa* being written either as *văsa* or as *vāsa*, and certain conjuncts could not be tackled properly by the scribes, *-vy-* being written *yv*, for instance.

This makes it all the more necessary to give phonetic transcriptions of our early inscriptions, with their faulty orthography, for linguistic work. This was attempted quite regularly by Dr. F. W. THOMAS who took care to give, beside a rigorous Roman transliteration, a tentative phonetic transcription indicating the double consonants and other points in pronunciation some Early Indian inscriptions. With an imperfect system of writing like the Kharoshṭhi which not only did not indicate the double consonants but also ignored the long vowels, a phonetic transcription becomes doubly necessary. The fragments of the *Dhammapada* and other MSS. giving in Kharoshṭhi specimens of the North-Western Prakrit as it was in vogue as a literary language in the 4th century A.D. also require to be phonetically elucidated, and this cannot be done from a mere transliteration but only through careful transcription by means of a script like the IPA., a transcription which in itself would be a phonetic reconstruction of the highest importance.

An attempt to represent the pronunciation of an Indo-Aryan dialect or speech at a given place and within a given period would be a great corrective to loose thinking in the matter of historic development of the language, and supply us with the true perspective. The vexed question of the evolution of New Indo-Aryan from late Middle Indo-Aryan (Apabhraṃśa), when we have before us a mass of literature of a rather artificial type produced by persons speaking early forms of New Indo-Aryan but sticking to a more archaic orthography which belonged to the earlier MIA literary tradition of the Apabhraṃśa, can be very largely made simpler by insisting upon the purely phonetic and phonological aspects of the question.

The above method has yielded very substantial results in the study of the Western European languages like English, German and French. In my own work I attempted to establish the pronunciation of Old Bengali in its formative period (*c.* 1100 A.D.), and of Early Middle Bengali (of *c.* 1400 A.D.), much as they have established the pronunciation of Old English and of Chaucer, and Shakespeare, in English, and of the language of the *Chanson de Roland,* of the works of Villon and of Montaigne in French. We should at the same time, as phonetic exercises primarily, cultivate the habit of reading specimens of a particular language at a given epoch, in the pronunciation which obtained at the time. This of course is not for every day work, or for appreciating the matter or content of a great work of literature, but is in connection with a thorough study of the language. Scientific exactitude

should be our aim, and phonetic transcriptions (through an alphabet like that of the IPA) of say Vedic in the pronunciation of 1000 B.C. (which can be arrived at only after a very painstaking phonetic study and analysis and historical and comparative enquiry), of an Aśokan edict of c. 250 B.C. in the something near enough to the actual pronunciation of an official of Pāṭaliputra, of Sauraseni Prakrit of c. 400 A.D., of Sauraseni Apabhraṃśa of c. 900 A.D. of a poem by Kabir of c. 1450 A.D. will then take its legitimate place in the historical study of a certain type of Indo-Aryan. So too in the case of the Dravidian languages. We read a Tamil poem of c. 500 A.D. in a modern Tamil pronunciation, just as a Persian scholar of the present day finds nothing wrong in reading Firdausi of c. 1000 A.D. in the pronunciation in vogue in Modern Persian of the year of grace 1957. And yet how much of the history of the language becomes clear before our eyes if we try to follow the historic method underlying an attempt to read the work as the original author himself read it! The value of this method for establishing or demolishing the alleged antiquity of a particular text or MS. can be easily appreciated. We have followed this method in establishing the antiquity of certain Early Bengali texts with considerable success. Like grammar, vocabulary or thought-content, or literary and other atmosphere, or matters of reference, nuances in pronunciation which can be detected by a rigorous phonetic analysis of a particular text specially when we try to render it in its restored pronunciation, and that too with a rigorously phonetic transcription at once give out the secret behind the language, and enable us to conjecture or ascertain the date or age.

Apart from the historical study of a particular language, a careful phonetic analysis, properly indicated by means of an all-inclusive phonetic transcription, of facts in a modern dialect or spoken form of a language is sure to place before us new facts and along with them new problems which must be solved if we are to unravel the past history of our languages. A case in point is the modification of the aspirate [h] and the voice aspirated stops [gh, jh, ḍh, dh, bh] in a large number of New Indian speeches which form a ring round the Central or Midland group of New Indo-Aryan (e.g. Hindki, Eastern Panjabi, Sindhi, Rajasthani and Gujarati, as well as East Bengali, as opposed to Western Hindi, Kosali, Nepali and other Pahari speeches, the Bihari dialects, and Western Bengali). The written form of the word in Hindki or Eastern Panjabi, in Marwari or East Bengali reveals nothing: a word like *ghoṛā* is spelt in the same way everywhere, but in the actual pronunciation of the word in these different speeches is a revelation (Hindki *g'oṛā*, East Panjab *k◡oṛa*, Marwari *g'oṛo*, East Bengali *g'urá*—tone or pitch modulation being substituted for the original aspiration, along with other changes). This is an aspect of the question which we must place in the forefront, whenever detailed study of an Indian language or dialect is taken

in hand, whether by an individual scholar or organisationally in the form of a much necessary new Linguistic Survey of India — viz. the thorough study of the phonetics of the language as one of its basic elements.

Below a few tentative phonetic transcriptions of Indian languages at different periods as illustrations of a historical phonology of Indo-Aryan in its earlier periods (Old Indo-Aryan — Vedic; Middle Indo-Aryan — Early or Aśokan, and Second or Śaurasenī Prakrit). Similar phonetic transcriptions can be made for Indo-Aryan at subsequent periods in the various parts of the country: and of the cultivated Dravidian languages like Tamil — Malayalam, Kannaḍa and Telugu, following the various stages of their development.

Illustrations

I. Rig Veda, I, 1. t, d = t̺, d̺, alveolar.

1. agním i:l̬ai puráuɦitaã (-tam)
ĭaɟ̬násĭa daiwám (daiŭám) r̥tu̯íɟam
ɦauta:raã ratna̩ dɦá:tamam.

2. agnĭi̯ (φ) pú:ru̯aibɦir ŕ̥s̥ibɦir
íl̬iau nú:tana:ir utá
sá daiu̯ấ: áiɦa ŭaks̥ati.

3. agnína: raĭím aç̣naŭat
páusʋam aiŭá diŭái-diŭai—
ĭaçásáã ŭi:ráŭattamam.

4 ágnai, ĭám ĭaɟŋam adhŭaráã
ŭiçŭătaa̩ (φ) paribɦú:r asi,
sá id daiŭáis̥u gacchati.

5. agnír (ɟ) ɦáuta: kaŭíkratus
satĭáç citráç çraŭastamaa̩,
daiŭáu daiŭáibhir á: gamaṭ.

6. ĭád aŋgá da:çús̥ai tuám
ágnai, bɦadráɒ karis̥ĭási
táuáit tát satĭám aŋgiraa̩.

7. úpa tŭa:gnai diŭái-diŭai
dáus̥a:ŭastar, dhiĭá: ŭaĭám
námáu bɦáranta áimasi.

8. rá: ɟantam adhŭará: n̦ã: ɒ
gaupá: m ṛtásĭa dī: diŭim
ŭárdɦama: naã suái dámai.

9. sá naą (φ) pitáiŭa su: náŭai
ágnai su: pa: ĭanáu bɦaŭa,
sácasŭa: nas suastáĭai.

II. Asoka Inscriptions: Rock Edict I:

(a) MANSEHRA: ^j^ ˜ dɦ^rm^dipi de: va: n^ (m) prije: n^ prij^d^rçina: r^ŋ: a: likha: pita: hid^ no: kicci ɟi: ve (for ɟi: vo:) a: r^bhittu (=a: r^bhitŭa:) pr^juhot^vije (for pr^ ʒuhot^vvo:) no: pi c^ s^ (m) a: ɟ^ k^ț^ț^ vij^ (for ?k^rt ^vv^). b^ɦuk^ (m) ɦi do: ʂ^ (m) s^ma: ɟ^ss^ de: va: n^ (m) priye: (for priyo:) prij^- d^rçi: ra: ɟa: (?) drikkhati. asti pi cu (or c^) e: k^tij^ (for ek^tt^) s^ma: ɟ^ sa: dɦum^t^ (Shbz. sre: sț^m^tə) de: va: n^ prij^ss^ prij^d^rçino ra: ɟine: (for r^ŋ: o:). pura: m^ha: n^s^ssi (for m^ha: n^s^swi, -spi) . . de: va: n^ prij^ss^ prij^d^rçissa ra: ɟine (for r^ŋ: o:) ^nudiv^ (so:) b^ɦu: ni pra: n̦^- ç^t^- s^ɦ^sra: ni a: r^[bhij]isu (-isŭũ) — su: pa: rtha: je: (for -j^). se: (= so:) ida: ɦi y^da: ^ji (= ^j^m) dɦarm^dipi likhita: t^da: tinni (for tr^jo:, Shbz.) je (v^) pra: n̦a: ni (for pra: n̦a:, Shbz). a: r^bɦij^nti due (= dwo:) m^ɟura: eke: (for e: ko:) mrige (for mṛgo:) se: pi (for so: pi) cu mrige (for mṛgo:) no: dhruv^ ˜. e: ta: ni (for e: ta:) pi cu tinni (for tr^jo:) pra: n̦a: ni (for Shbz pra: n̦a:) p^ccha: no: a: r^bhiçç^nti.

(b) JAUGADA: ij^m dh^mm^lipi kh^piŋg^l^ssi p^vv^t^ssi de: va:-n^m pije: n^ pij^d^ssina: la: ɟina: likha: pita: — hid^ no kicchi ɟi: v^m a: l^bɦittu pr^ɟoɦit^vije no: pi c^ s^ma: ɟe: k^țț^vije: b^hukaṃ ɦi do: s^m s^ma: ɟ^ssi dekkhati de: va: n^m pije pij^d^ssi: la: ɟa: atthi pi cu e: k^tija: s^ma: ɟa: sa: dɦum^ta: de: va: n^m pij^ss^ pij^d^ssine la: ɟine: puluv^m m^ɦa: n^s^ssi de: va: n^m pij^ss^ pij^d^ssine: la: ɟine: ^nudiv^s^m b^ɦu: ni pa: n^s^t^-s^ɦ^ssa: ni a: l^bbɦijisu su: p^țțɦa: je se: ^ɟɟ^ (j) ^da: ij^m dɦ^mm^lipi likhita: linni je: v^ pa: na: ni a: l^bbɦij^nti — duve: m^ɟu: la: e: ke: mige: se: pi cu mige: no: dɦuv^m. e: ta: ni pi cu tinni pa: na: ni p^ccha: no: a: l^bbɦijiss^nti.

(c) GIRNAR: ij^m dɦ^mm^lipi de: va: n^m prije: n^ prij^d^ssina: ra: ŋa: (r^ŋŋa:) le: kha: pita: idɦ^ n^ ki̯nci ɟi: v^m a: r^bɦitpa: pr^ɟu: ɦitavj^m n^ c^ s^ma: ɟo kattavjo: b^ɦukam ɦi do: s^m s^ma: ɟ^mɦi passati de: va: n^m prijo: prij^d^ssi ra: ɟa: asti pi cu e: k^cca: s^ma: ɟa: sa: dɦum^ta: de: va: n^m prij^d^ssino ra: ŋo (for r^ŋŋo: ?). pura: maha: n^s^mɦi de: va: n^m prij^ssa prij^d^ssino: ra: ŋo: (=r^ŋŋo: ?) ^nudiv^s^m b^ɦu: ni pra: n̦^-s^t^- s^ɦ^sra: ni a: r^bbɦisu sup^ttha: j^. se: ^ɟɟ^ j^da: ^j^m dɦ^mm^lipi likhita: ti: e: v^ pra: n̦a: a: r^bbɦ^re: su: p^ttha: j^ dvo: mo: ra: e: ko: m^go: so: pi mago: n^ dhuvo: e: te: pi tri: pra: n̦a: p^ccha: n^ a: r^bbhiss^re:

III. From the *Mṛcchakaṭika*, Act VI: Specimen of Saurasenī Prakrit.

eδina: p^ɽiβe: si^- g^ɦ^β ^δi-da: ɹ^γ^-ke: riγa: e: suβ^nn^- s^γ^ɽia: e: ki: l̦iδ^m. te: n^(j)^ sa: n̦i: δa: t^δo: (β) un^ t^m m^gg^nt^ss^ m^e: iδ^m m^țțiγa: s^γ^ɽia: k^δu^ din̦n̦a: t^δo: bɦ^n̦a: δi — r^δ^nie: , kim m^m^ e: δa: e: m^țțiγa: — s^γ^ɽia: e: t^≈ jje: β^ so: β^nn^- s^γ^ɽi^m de: ɦi tti. ɦ^ddɦi: , ɦ^ddɦi: . ^j^m pi na: m^ p^r^s^mp^tti: e· sant^pp^δi bh^(γ)^ β^≈ k^(δ) ^nt^, pokkh^r^-β^tt^-p^ɽiδ^- ɟ^l̦^βindu- s^rise: hiĩ ki: l̦^si tum^m puris^-bɦa: (γ)^-dhe: e: ɦiĩ ...... ɟa: δa, ma: ro: δ^: soβ^nn -s^(γ) ^ɽia: e: ki: l̦iss^si.

r^δ^n̦i(γ)e: , ka: e: sa: ?

piδuno de: gun^niɟɟiδa: da: si:

ɟa: δ^, ^ɟɟ^(γ)a: de: ɟ^n^n̦i: bho: δi (βɦo: δi:).

r^δ^n̦i(γ)e: , ^li(γ)^m bh^n̦a: si tum^m. ɟ^(δ)i ^mɦa: n^m ^ɟɟ^(γ)a: ɟ^n̦^n̦i: , ta: kiss^ ^l^ɒkiδa: ?

GLIMPSES FROM BORO FOLK SONGS

BY

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1. In the course of my studies in Boro language of Assam, I have had opportunities to listen to many a folksong presented in accompaniment with typical Boro instruments. I like to present below three Boro folksongs on love and romance not from the musical point of view, but from a minor linguistic approach. Boro is an important Sino-Tibetan speech spoken in the districts of Assam valley, and northern districts of West Bengal. This language is usually known as Boḍo or Plains Kacharī. But the people call themselves Boro and their speech is nationally known as Boro [/b ɔ̄ː/r ɔ́ː]. According to the census of India, 1951 the Boro speakers of Assam (including Dimasa, Hairamba and Boro-Kachari Dowan) are estimated at about two lakhs. The language has three main dialect-regions: Western (Northern districts of West Bengal and a few portion of Goalpara), Central (most of Goalpara, Kamrup, Darrang and Nowgong), and Southern (North Cachar and Mikir Hills and some areas of Cachar district).

2. The texts of these songs represent the form of Boro speech spoken in the central dialect-regions. The first two songs are gathered from Shri Madaram Brahma of Kokrajhar, Goalpara (Assam) in 1953. Shri Brahma is a Senior Government Officer and is related to Hon'ble Shri Rup Nath Brahma of Assam cabinet. This form of speech spoken in Goalpara is easily understood in western and central dialect-regions. The reading of these songs is given by Shri Bhabendra Narzi in normal voice quality. Shri Narzi comes from Rangia, Kamrup (Assam) and he has been attached to the School of Linguistics, Deccan College, Poona since 1955, as a Boro informant. The third folksong is procured from Shri Narzi.

3. The brief phonemic writing conventions of these texts are given below:

/p, t, k, b, d, g, m, n, ŋ, r; l; c; z; i; e; a; o; ɔ̆; u/ represent segmental phonemes. There are three significant tones in the language. These tones associated with features of length, stress, and voice quality represent three

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suprasegmental phonemes. A syllable has been described as the minimum unit of a Boro utterance. A syllable possesses one of the six vowel phonemes as its nucleus with or without single or cluster consonantal phonemes associated with one of the three suprasegmental phonemes. The glottalization is a phonetic feature associated with tones.

The tones are termed as high, mid and low. The tonemarks in case of high and low tones are shown before the relevant syllable. The mid tone has not been marked in this transcription.

For high tone /ʼ/ we have usually clear voice with short syllable nucleus with final glottalization, rarely we have clearer musical voice with overlong syllable duration; there is association with high level of pitch, pitch may rise from mid to high, sometimes from low level to high:—

/ʼbi/ [ʼbɪʔ], he; /ʼza/ [ʼd̲za?], eat. /ʼha/ [ʼha::], what is it? (emotional context).

For mid tone we have normal clear voice, associated with medium pitch with variable quality of syllable nucleus (usually short or half long) and there is absence of glottalization in the syllable final position. The pitch is either mid-rise or mid-level. The tone is left unmarked in phonemic transcription.

/hor/ [hɔ·r], night; /cŏr/ [cŏ·r], iron; /ce/ [ce·], one.

For low tone /ˏ/ we have usually less clear or breathy voice associated with low pitch and longer syllable duration without the feature final glottalization. The pitch falls from mid to low or high-mid to low.

/ˏbi/ [ˏbi:], to beg; /ˏza/ [ˏd̲za:], to be; /ˏhor/ [ˏhɔ:r], to hang down.

These three level of tones contrast each other, and inspite of a considerable range of phonetic feature, the Boro utterances are syllabically brought under a tonemic analysis. Tone is inherent to each syllable of the Boro words of main system; loan words and usually unknown foreign words at the first stage remain tonally neutral. But the process of naturalization slowly goes on work and in a later stage, the loan words and uncommon foreign words are garbed in Boro phonology and they acquire the usual features of tones postulated above. These are observations from our study of Boro mono–syllabic and disyllabic words in isolation. The modification of tones at syllable and word boundaries has often been noticed. The writer is grateful to Dr. Suniti Kumar Chatterji for bringing first these ideas in 1953 and to Prof. John Burton-Page for favour of offering a methodology to work out tones in 1955.

As for the segmental phonemes, /p, t, k/ are initially strongly aspirated, less aspirated as a member of the consonant cluster and never aspirated in syllable final position occurring as unreleased stops. /c, z/ are alveolo-palatal spirants with affricated allophones with ranges from dentio-alveolar position to alveolo-palatal position. /ŏ/ is an unrounded mid-vowel with a considerable range, typically Boro in production. /u/ has also allophones uttered with unrounded lips. This short analysis of Boro phonemes is expected to do something in correct reading of the following texts. The proper names are tonally not marked in our transcription. These are shown in italics.

4. The text of each song is followed by a translation-meaning with an eye to the context of situation. The social and philological aspects of Boro Folksongs are not discussed in this elementary paper.

(1)

ci/kla: /dŏi\lai /nŏ /taŋ\lai gŏn
ai/a \rai lai gŏn,
\or \lai/nŏ /taŋ\lai gŏn
\apa /ia \bn\laigŏn.
/ŏi /ŏi \ada *larubandaru.*
\ada *larubandaru.*

\ceŋ/ra: ziŋga \da/ci ziŋga\da/ci
\aŋbadi \hŏu/a \ta na i\ao,
ziŋga \da/ci a/gŏi ziŋga\da/ci
ziŋga \da/ci a/gŏi *rŏndacimŏndaci.*

Maiden : "If I go to fetch water (and thereby to meet you alone in secrecy), mother would reproach me; if I go to bring fire (from a neighbouring house and thereby to meet you secretly), father would beat me.
O my elder one (lover) *Larubandaru,*
O my elder one *Larubandaru !*"
(In a tone of helplessness).

Youth : "Don't be sorry, be not sorry,
(do not meditate these things)
O my younger one (beloved) *Rŏndacimŏndaci,*
when there is a youth like me;
(who is in your love)
O my sweet one!"

(2)

ci/kla : ha/zŏ \ko ro/ao ha/zŏ \koro/ao,
\boŋ/paŋ \dan/nŏ /taŋ/bŏla /taŋ/bŏla,
/na gŏ/ran be\dor gŏ/ran
\la/bŏ \la/bŏ \ada *porbacu* /zŏhlao.
\la/bŏ \la/bŏ \ada *porbacu* /zŏhlao.

\ceŋ/ra : \de \de \la/bŏ gŏn a/gŏi *gaŋcri-cona*
/zŏu \coŋ na/nŏi \dŏn /de
/hi ba \konaiao.
\zoca mai/roŋ \dŏn /ka/de
\nŏŋ \con na /nŏi,
\de \de \la/bŏ gŏn a/gŏi *gaŋcri-cona.*

Maiden : "When you go to cut the fuel
at the foot of the hills,
bring me dry fish and meat,
O my hero *Porbacu,* my elder one!"

Youth : "Certainly, certainly, O my sweet *Gangcri*
Will I bring you these things.
Prepare for me more liquor (/zŏu),
and conceal in the midst of cloth-heap,
and keep ready the boiled rice
of sweet scented paddy (after you husk it).
O my precious *Gangcri,* my sweet one,
these will I bring for you."

\ceŋ/ra: ha/zŏ \koroni ho\lo lo/ka,
aŋ/zŏŋ \rai/zŏ za/gŏn/a \nŏŋlo/ka.

ci/kla : \ada ha/tai \cali/ni
/tao diŋ\gri/lo \nŏŋ\bai/ka.
a\can mu/ta gŏ/zŏŋ
/lŏ lo \nŏŋ \dŏn/ka.

Youth : "The *hololokha* vegetable
grows on the hill,
so you grow in my heart.
You are the only maiden
who happens to be the mate of my life."

Maiden : "O my elder one !
don't be sorry,
be not melancholy;
you shall purchase
a bottle of perfumed oil,
a pair of bracelets
and a dazzling garlands;
so that I can have these
just after my arrival at your house !"

5. These songs present a few Boro words of diverse interests. The word, *\ada,* literally means my elder brother, here it denotes the lover; so also the word for younger sister (*a'gŏi*) has its special meaning here as the lady love. The philological interpretations of a few Boro words like *'dŏi, ha'zŏ,* etc., and their probable influences on the formation of Indo-Aryan river-names and toponomy are reserved for future discussion.

FIELD-NOTES ON NAHĀLI

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1. In the *Linguistic Survey of India*, Vol. IV, Nahāli has been described as a mixed language having a Munda speech allied to Korku as its base, with borrowed elements from Dravidian and Indo-Aryan. The Munda, Dravidian and Indo-Aryan traits are unmistakable in Nahāli. But if we analyse the inadequate material published in the *Linguistic Survey of India* on this speech, a good number of forms will be found in it which cannot be called Kolarian, Dravidian or Indo-Aryan. Some scholars are therefore not prepared to accept the theory of a Kolarian base for Nahāli and are very much inclined to trace in those unidentified traits the remnants of a lost family of speeches which was spoken in India in pre-historic times. Unfortunately, the nature and extent of this unidentified element in Nahāli could not be ascertained from the insufficient data available on this speech. It was therefore felt that fresh material should be collected on Nahāli to aid a solution to this problem (Robert SHAFER, *Ethnography in Ancient India*, 1954, p. 13 ; T. BURROW, *The Sanskrit Language*, p. 376).

In 1954-55 I undertook a survey of the Kolarian languages under the auspices of the Department of Anthropology, Government of India, which is at present the only Institution in India to offer facilities for the study of obscure tribal tongues. In course of my field-work in the Burhanpur tahsil, Nimar, I luckily came across a few Nahāli-speaking Nahāls through the kind help of Shri Dasarath PATEL of Kanapur village. I studied the speech from those informants for a short time. The main object of this paper is to make available this new material on Nahāli to those scholars who are interested in this problem.

2. According to the Census of 1951, only 1196 persons speak 'Nihali' in the 3 districts of Nimar, Amraoti and Buldana. The Nahāls have been 'mentioned in old documents as hill robbers', and appear to be an ancient ethnic group of Western India, now concentrated in Khandesh. They may be tentatively identified with the ancient tribe called Nāhalka, mentioned in Padma Purāṇa (II. 27, 42-3) as an off-shoot of the Niṣādas, who were 'settled in the hills and forests', and were 'addicted to vices'. It is interesting to note that the Korku and others call these people by the name of Nahāl, but the people themselves use a different nomenclature, viz. Kalṭo, to designate their group.

3. I have seen that the Korku consider the Nahāl to be an inferior section of their tribe. In a Korku folk-tale recorded by us the Nahāl have been characterised as an inferior type of people addicted to vices and cow-killing. The Nahāl clan-names, collected by us, are: *Kakri* (cucumber), *Jambu* (blackberry), *Bōy* or *Jhara* (grass), *Cokob'* (leaf of tree), *Joppo* (water), *Cicca* (tamarind), *Ṭōṭa* (maize), *Ḍhapri* (bank of river), *Kōlya* (fuel), and *Chocho* (kind of fruit). Most of these clan-names have also been found among the Korku. The Nahāl now-a-days live mostly in a region that lies contiguous to the West and South-west of the Korku tract. Apart from their connection with the Korku, they also appear to have some relation with the Bhil, for the reason that they are also counted as an inferior section of the Bhil of Khandesh (R. E. Enthoven, *The Tribes and Castes of Bombay*, Vol. I, 1920, p. 174). The Nahāl tract lies in-between those of the Bhil and the Korku. It will be an interesting study to find out the exact relationship of the Nahāl with their two great neighbours. From a study of the Nahāli speech we can only find out the Korku and Kolarian traits in it. But in the absence of any precise knowledge about the original language of the Bhil, it will not be possible at the present stage to ascertain the Bhil element in Nahāli. We are giving below a short account of this speech in the hope that competent persons will analyse the material to find out the different elements contained in it.

4. Nahāli sound-system essentially agrees with that of Korku. The vowel length is of lesser importance in this speech which is a characteristic feature of many Kolarian tongues in contradistinction to Dravidian and old Indo-Aryan. A tendency to diphthongise or split up a long vowel can be noticed in Nahāli. Examples are *kō-* (*kŭō-*) 'to bring', *kōr-* (*kŭōr–*) 'to take away', *jō* (*jŭō*) 'I', *ĭēpṭa* 'honey', *ĭēnken* 'will go', *kānṭi* (*kĭānṭi*) 'for', 'for the sake of', etc. The *a* is a low, fronted sharp vowel which occurs as equivalent to Sk. *a* in most of the non-Aryan speeches of central and southern India. Nasalization of vowels occurs mostly in respect of *ā̃*, *ē̃* and *ō̃*, but is not very frequent. The *Linguistic Survey of India* has given the Nahāli word for 'head' as *peṅg*, but the form collected by us is *pē̃i*.

5. The varition in the pronunciation of a dental and retroflex *t* and *d* is noticeable in Korku and Nahāli which perhaps indicates the existence of alveolars in those speeches, now disintegrating due to the influence of modern Indo-Aryan; cf. Nahāli *dud*, *ḍuḍ* 'milk', Korku *khiti*, *khiṭi* 'field', etc. Checked consonants are less frequent in this speech than in Korku: Nahāli *jilŋguij'* 'earthworm'. The glottal stops, heard in many Kolarian speeches, are not found in Nahāli and Korku. The aspirate stops and voiced *h* are pronounced with greater ease in Nahāli, which perhaps indicates that the Dravidian traits to be found in this speech are less fundamental. The only sibilant is dental

in Nahāli. But a sibilant is often changed to palatal affricates *c, ch,* two frequent sounds of this speech. Thus, Nahāli *chocho* 'a clan-name' : Korku *soso* 'id.' ; Nahāli *manco, mancho* 'man' : Sk. *manuṣya* ; Nahāli *vorcho* 'year' : Sk. *varṣa* ; etc.

6. Consonantal *sandhi* plays an important part in Nahāli. Thus *arḍo, aḍḍo* 'tree', *jilŋguij'* 'earthworm' + pl. *ṭa* = *jilŋguiṭṭa.* This change is more evident in Nahāli conjugation ; for example : *ḍelem-be* 'drink (Imperative)', *biji ḍelen* 'do not drink', *ḍelen-i* 'did not drink', *deleŋka* (or *ḍelenka*) 'is drinking', etc. But Korku is very liberal in permitting clusters made of different types of consonants. Vocalic variations also occur in Nahāli. But there is still much confusion in this matter.

7. The unidentified elements in Nahāli are more visible in the structure and lexical material of this speech. It has 3 numbers, singular, dual and plural, but exclusive and inclusive forms are not distinguished in it. The dual and plural suffixes are added only to animate objects as in Korku, but the suffixes for dual and plural in this speech are *ihṭel* (or *hiṭel, ṭel*) and *ṭa,* respectively, which come no where near the Kolarian, Dravidian or Indo-Aryan suffixes denoting number. Examples of dual and plural forms from Nahāli :

kōl 'woman', dl. *kōlhilṭel ; mancho* 'man', dl. *manchihlṭel ; māv* 'horse', dl *māvihlṭel* ; *kalṭo* 'a Nahāl', dl. *kalṭihlṭel,* etc. The corresponding pl. forms will be *kōl-ṭa, man-ṭa, māv-ṭa* and *kaliṭṭa.*

An *-l* suffix has, however, been recorded forming the pl. of the 3rd person pronoun. Thus, *eṭey* 'he', *iṭṭel* 'they two', *eṭla* 'they'. There is an *-l* pl. suffix found in many Drav. languages.

The first and 2nd person plural (and also dual) forms are *ṭyēko* and *nēko ;* cf. *ṭyēko giṭa bommoki* 'we two are brothers', *nēko giṭa bommoki* 'you two are brothers'. This *ko* is obviously the Korku pl. suffix *-ku* found in many other Kolarian speeches. The word *bommoki* is difficult to explain. It may be derived from a Nahāli word whose cognates are found in Korku as *bokeya,* in Juang as *bɔk,* in Mundari as *boko,* meaning 'younger brother', with an infixed *-mo-* denoting dual number ; cf. Gadba *būyaŋ* 'brother', *būmiyaŋ* 'two brothers' ; *būlon* 'sister', *būmulon* 'two sisters'.

8. There are some peculiarities in the declension of Nahāli nouns and pronouns. Many nouns are found to end in *-ō.* Thus, *mancho* 'man', *palco* 'son', *bologo* 'bear', *ḍaŋgo* 'branch of tree', *pāco* 'five', *kāmo* 'work', etc. A similar *-o* is found in Korku; e.g. *koro* 'man', but the pl. is *kor-ku; rojo* 'daily', *mēghnātho* or *maiŋnaṭṭo* 'a Korku god identified by some Korku with Meghanātha, son of Rāvaṇa'.

9. The same suffixes are found to be used for the accusative and genitive, and instrumental and locative in the declension of nouns and pronouns in Nahāli. The cases will therefore fall under the following four heads:

Cases	*Suffixes used*
Acc. and Gen.	*-n, -na*
Instr. and Loc.	*-ki* (*-ke*)
Dat.	*-ke* (*-ki*, -ge)
Abl.	*-kon*

10. The Nahāli word for 1st person sing. is *jō* 'I' which form is found to be used only in the nominative. In other cases *eŋ* is used which is perhaps related to *iñ, iŋ* 'I', used in many Kolarian languages including Korku. This *eŋ* and 2nd person sing. *nē* and pl. *lā-* are found to take oblique increments *-g, -n* and *-l*, respectively, before taking the case–formatives. Thus, *eŋ-g-e-n arabe* 'see me', *eṭey nē–n–en araka* 'he sees you (sing.)' *jŭō lā-l-a-n araken* 'I will see you (pl.)', etc.

11. The different cases in Nahāli are illustrated below:

(i) *Accusative and Genitive*: *-n*: *eṭlam peṭeki* 'make them sit' (for the change of *-n* to *-m* in *eṭlam* see § 6), *heren cāvgoki* 'frighten this person', *backaren biji āpaeŋ-kama* 'do not make the child weep', *cōrṭan cekibe* 'catch hold of the thieves', *iṭi manchon manḍibe* 'tell this man', etc.

iŋgi-n avar 'our house', *an manṭa-n avar* 'other mens house', *eṭe-n ayrere* 'his mother', *bai-n kokhor* 'sister's fowl', etc.

-na: *eṭey iŋi mōṭh jen-na araken* 'he will see us three persons', *eṭla iŋgin-na cāvgo-kamai* 'they frightened us', *here-na kaṭṭokka paḍabe* 'beat this person to death', *nē eṭe-na arṭhiki* 'you make him weep', *jŭō eṭey-na avar-kon bī–kamai* 'I turned him out of the house', etc.

kōl-na kupra 'wife's cloth', *eṭey-na kōllere* 'his wife', *ṭyēko-na aba* 'father of us two', *han nāni-na avar* 'whose house is this?' *ho mancho-na abare* 'that man's father', *eŋge ḍai-na palcure* 'my elder brother's son', etc.

The genitive *-a* found in Korku and many other Kolarian languages can also be traced in Nahāli. But it appears that *-e* is used in the sing. and *-a* in the pl. in this speech. Thus, *eŋ-g-e āṭho* 'my husband', *eŋ-g-a avar* 'our house', *nē–n–e palco* 'your (sing.) son', *lā–l–a kokhor* 'your (pl.) fowl', etc.

A possessive case can also be formed in Nahāli without using a suffix. Thus, *aḍḍo kajar* 'top of the tree', *nē rupya* 'your rupee', etc.

(ii) *Dative*: In Korku *-ke* and *-ken* are used both in acc. and dat. But in Nahāli *-ke* (*-ki*) is found only to form the dative case. Thus, *eɒ-g-ke ma* 'give me', *eṭey-ke bebe* 'give him', *eɒ-g-ke nāɒ kōyi* 'what have you brought for me?', *nāni-ki beken* 'whom shall I give?', *eɒ-g-ke cāṭo pāṭi* 'I felt hungry, lit. hunger came for me', *nē-ke bi cāṭo pāṭi* 'you were also hungry, lit. hunger came for you too', etc.

A stray form has been recorded in our material in which *kiānṭi* has been used as a postposition to denote a dative idea; e.g. *hin mancho-kiānṭi nān kōyi* 'what have you brought for this man?'. *Kiānṭi* or *kānṭi* is also used to form infinitives of purpose: e.g. *ara-kānṭi* 'to see', *ṭyē-kānṭi* 'to eat', etc.

(iii) *Instrumental and Locative*: *-ki*: *cakoṭo-ki aḍḍo beribe* 'cut wood with axe', *junu-ki cakhavbe* 'sweep with broom', *mochor-ki cuṭṭibe* 'pound with pestle', etc.

ī biya-ki kalṭo beṭe 'there is no Nahāl in this village', *hin-ki nān jere* 'what has happened at this place?', *aḍḍo-kajar-ki* 'on the top of the tree', *gham-ki kupra jeldi paṭarka* 'cloth will be dried up soon in sunshine', etc.

In *ḍoɒgor-ke erka* 'going to the hills (for wood)' the implied dative idea ('for wood') is more prominent than the locative sense expressed in 'to the hills'.

(iv) *Ablative*: *-kon*: *aḍḍo-kajar-kon* 'from the top of the tree', *hin-kon eger* 'remove from here', etc.

In Hindī *-se* is used both in instr. and abl., which has perhaps influenced the following formation in Nahāli:

eɒge-kon ī kāmo bekkamay jere 'this work will not be done by me', *ī mancho-kon jereka* 'it will be done by this man'.

12. In many languages in India kinship terms are inflected to show the person of the possessor. This trait has a very wide distribution in India and is found in the Kolarian, Dravidian and Tibeto-Burman languages, and also in Burushaski (see M. B. EMENEAU, "Dravidian Kinship Terms", *Language*, Vol. 29, No. 3, 1953). In some Kolarian languages terms denoting limbs of the body and those denoting articles of material culture are also inflected to show inalienable possession. In Nahāli and also in Korku the kinship terms are inflected, but these terms take the suffix only when they stand in relation to a 3rd person. Thus Nahāli *eɒga aba* 'my father', but *eṭeyna aba-re* 'his father'. The inalienably possessed kinship morpheme for the 3rd person is *-re* in Nahāli and Korku, *-ro* in Juang, *-ḍe* in Gadba and Ḍiḍey, *-ḍoi* in Parengi and *-te* in Santali and Mundari. The Nahāli kinship

terms are of a highly classificatory type. Even opposite sexes are sometimes expressed by the same word in this speech.

13. The most important feature of Nahāli conjugation is its simplicity. Verbal ideas are expressed mostly with the help of separate words. Nouns, adjectives and adverbs are not often used as verbs in it as is done in Korku and other Kolarian languages. The number and person of the object and subject are not shown in the verbs in this speech. In this matter Nahāli differs particularly from the Kolarian tongues most of which are noted for their complicated verbal system. A Nahāli verbal form consists only of the base and the tense particle, at times glides or union vowels intervening between them.

14. The following tense particles are used in this speech:

(i) *-ka* — to form Habitual Present and Present Imperfect tenses. Examples are: *ḍhōr bōy ṭye-ka, jō chokra ṭye-ka* 'cow eats grass, I eat bread', *eṭey dinaka ara-ka* 'he sees every day', etc.

corṭo dokco-ka 'blood is coming out', *jō ḍoŋgorke er-ka* 'I am going to the jungle', *manṭa aḍḍo beri-ka* 'men are cutting wood', *backar apa-ka* 'the child is weeping', *nē cāvgo-ka* 'you are being frightened', etc.

(ii) *-ken* — to form future tense. Examples are: *ara-ken* 'will see', *paḍa-ken* 'will kill', *cakhav-ken* 'will sweep', *ōla-ken* 'will be wet', *cakha-ken* 'will ascend', etc.

The Present and Future tenses are usually distinguished in this speech, although the Present tense particle *-ka* is sometimes used also to form the Future tense. Thus, *jalū-ka* 'will descend', *peṭe-wa* 'will sit', *kama-ka* 'will do work', *ṭye-ka* 'will eat', etc.

(iii) *-i* (*-y, -yi*) —to form Past tense. Examples: *beṭṭ-i* 'died', *paḍa-i* 'killed', *cakhav-i* 'did sweep', *cakha-i* 'did ascend', *ōla-yi* 'became wet', *cāvg–i* 'were (was) afraid', *kama-i* 'worked', *cuṭṭi-yi* 'pounded', *aḍik-i* 'was burnt', etc.

(iv) - (*y*) *a*, - (*y*) e—to form Past tense. Examples: *ara-ye* 'saw', *ṭiye-ye* 'descended', *cyō-ya* 'urinated', *oṭṭi-ya* 'pulled out', *ghaṭa-ya* 'searched', *icha-ya* 'pinched', etc.

The Linguistic Survey of India has suggested that *kadine* or *kedine* is a suffix to form Present Definite, which is perhaps wrong. The word *ḍan* is used in this speech, as in Korku, as an auxiliary verb in Past Progressive and Past Perfect: cf. Hindī *thā*. Thus, *ara-ka ḍan* 'was seeing' and *ara-ka-ḍani* 'had seen'.

15. The Korku method of pronominalising the verb to form transitives and causatives are not found in Nahāli. The method of using special affixes to form transitives and causatives which is followed in many Kolarian speeches and also in most of the Dravidian languages, is also not adopted in it. The usual practice to form transitive and causative verbs in Nahāli is to add the root *kama-* 'to do' with the base of the principal verb. The two verbs form one unit which follows the conjugation of the latter. Thus, *cokob paṭar-i* 'leaf dried', but *jō eɒge kōlna kupra paṭarkama-y* 'I dried my wife's cloth'; *joppo raban-ken* 'water will become cool', *eṭey joppo rabankama-ken* 'he will cool water'; *poyye aphir-ke* 'bird is flying', *nē aphirkama-ke (ka)* 'you are making it fly'; *jalū-ya* 'descended', *jō eṭlan jalūkama-y* 'I made them descend'; similarly, *kherikama-* 'to pull', *golakama-* 'to heap', etc.

Sometimes a different word is used to denote a transitive or causative idea. Examples are: *bī-* 'to rise', *ocol-* 'to lift'; *aḍik-* 'to burn (intr.)', *oṭṭi-* 'to burn (tr.)'; *apa-* 'to weep', *arṭhikama-* or *apaeɒkama-* 'to make to weep'; *beṭṭo-* 'to die', *paḍa-* 'to kill', etc.

16. Second person Imperative singular and plural verbs are mostly formed by adding *-be*. Thus, *uri-be* 'kindle (fire)', *ghaṭa-be* 'search', *bī-be* 'rise', *be-be*, 'give', *mer-be* 'play', *cana-be* 'dance', etc. The transitive and causative verbs which are compounded with *kama-* 'to do', are exceptions, for they use *-ki* to the base to form the 2nd person Imperative. Examples are: *keṭṭo-ki* 'put out fire' (future tense, *keṭṭokamaken*), *eger-ki* 'remove' (future tense, *egerkamaken*), *ḍeleɒ-ki* 'make to drink' (fut. tense, *ḍeleɒkamaken*), *peṭe-ki* 'make to sit' (fut. tense, *peṭekamaken*), etc.

The suffixes *-ye* and *-ke* have also been used in a few verbs to form the Imperative. Thus, *ulṭa-ye* 'fall', *ōla-ke* 'be wet'. The 2nd pers. Imperative of *iyēr-* 'to go' is *eḍe*, and that of *pāṭo* 'to come' is *piya*. It is found that in most cases the 2nd pers. Imperative ends in an *-e* which may be related to the Korku Imperative suffix *-e*.

17. The formation of negative verbs has the same variety in Nahāli as is found in many Kolarian speeches, particularly Korku. The negative word in Nahāli is *beṭe* 'there is not' 'it is not', which is sometimes changed to *beṭel, beṭela, hey beṭela*, etc. Thus, *eṭey hiṭiki hey beṭela* 'he is not here', *hoṭi paraynki jappo beṭela* 'there is no water in the river', *hi avarki mancho hey beṭel* 'there is no man in the house'. The negative of Imperative verbs is formed by using *biji, bij bic*, etc., before the base of the verb. Examples: *bic cāvgo* 'do not be afraid', *biji kō* 'do not bring', *biji pāṭo* 'do not come', *biji iyēr* 'do not go'; *bij anci* 'do not select', *bij jalū* 'do not descend', *bij uḍi* 'do not rub', etc. The negative word usually precedes the verbal form: but in one instance it has been found following the verb: *kaṭam biji* 'do not be silent'. Transitive and causative verbs which usually form the affirmative

Imperatives by suffixing *-ko* (see § 16) adds an extra element *-ka* to the root in the negative forms. Thus, *biji peṭe-ka* 'do not make to sit', *biji gola-ka* 'do not heap', *bij jalū-ka* 'do not make to descend', etc. In the remaining verbs the real base of the verb is found to be used.

In forming the negative of past tense *hoṭ, hoc, hop, hok̄*, etc. are used before the verb. Examples are : *hoṭ paḍa* 'did not kill', *hoc cāvgo* 'was (were) not afraid', *hok kōr* 'did not take', *hop puri* 'did not send', *hoc cakha* 'did not climb up', *hoṭ jalū* 'did not descend', *hoc jalūka* 'did not make to descend', *eɒke cāṭo hop pāṭo* 'I did not feel hungry' etc. It appears that consonantal *sandhi* does not always take place in Nahāli.

In the formation of the negative of rest of the simple tenses *bikil, bek, bac*, etc. are found to precede the verbal base. Thus, *bikil beṭṭo* 'will not die' 'is not dying', *bikil paḍa* 'will not kill, etc.', *bikil cakhav* 'will not sweep', *cāṭo bep pāṭo* 'hunger will not be felt', *bibil koṭṭo* 'will not beat', *bac cāvgo* 'will not be afraid', *bek kōr* 'will not take', *bikil jalūka* 'will not make to descend', etc.

18. The use of inflected conjunctives is a peculiar feature of many Indian languages. All the Kolarian languages, as far as I have seen, can now form conjunctive participles. But while working on many of them I noticed that the informants sometimes prefer to split up the sentence with a conjunction to avoid a participial formation. It may be a native element of this speech-family which is borne out by the fact that in Korku and Nahāli the conjunctives are formed by adding *-ḍo* which means 'and'; cf. Nahāli *jō ṭyē-ḍo pāṭi* 'having eaten I have come'.

19. The search for native elements in Nahāli is generally confined to its lexical material. But the fundamental points of the structure of a speech may also be of some help to us in this matter. I have therefore given above a short summary of Nahāli grammar which, I hope, will be taken into account in determining the real affiliation of this speech. A short vocabulary of Nahāli, collected by us, will now follow.

1. akhanḍi 'finger' (cf. Sk. *aɒgusṭha* 'thumb'), 2. aginbi- 'to perspire' (cf. Korku ; Sk. *agni* 'fire' 'heat'), 3. agri- 'to shut' (cf. Sk. *argala* 'bolt of door'), 4. aɒgarako 'shirt' (Sk. *aɒga-rakṣa-*): 5. *aɒgub-* 'to yawn' (Korku ; Sa. *aɒgop*' 'id.'), 6. aɒgluij- 'to bathe', 7. accha 'good' (Hi.), 8. achuḍ- 'to hang something', 9. aji 'husband's younger sister' (Sk.), 10. anci- 'to select', 11. *aḍek-* 'to burn (intr.)', 12. arḍu, aḍḍo 'tree' (cf. Par. *ara* ; Sk. *daru* 'tree'), 13. anḍa 'bad', 14. an 'other' (Sk. *anya* 'id.'), 15. aphir- 'to fly' (Korku ; San. *apir-* 'id.' etc.), 16. aphir-kama- 'to make to fly', 17. aba, bā 'father' (occurs in many Drav. and Kolarian languages of central India), 18. ay 'mother' (Sk. *āryā-*), 19. ayi below', 20. ara 'to see', 21. ānti 'for',

22. āpa- 'to weep' 'to cry', 23. āpaeŋkama- 'to make to cry', 24. āpo 'fire', 25. ārṭhi- 'to make to weep', 26. avar 'house' (Sa. *oṛak'*, Mu. *oṛa*, Korku *ura* 'id.', etc.), 27 ā̃tho 'husband' (Korku *ḍhō̃ṭha* 'id.'), 28. iyēr-, eḍ- 'to come', 29. iŋga 'here' (Korku), 30. icha- 'to pinch' (Munḍari *icha-* 'id.', etc.; cf. Go. *kiccana*, Oll. *kisk-*, Kui *kisa* 'id.', etc.), 31. itiki 'here', 32. iṭṭel 'they two', 33. imni- 'to be', 34. ira- 'to cut with sickle' (Korku, Sa, Mu., etc., *ir-* 'id.'), 35. ir 'two (fem. neut.)', irar 'two (masc.)' (Dravidian—see EMENEAU, *Kolami*, p. 198, vocable No. 302), ir-jen 'two persons' (Sk. *jana* 'person'), 36. ilur 'husband's younger brother' (Korku *ilur*, Mu. *iril* 'id.'), 37. ugaen- 'to remain' 'live', 38. ugar- 'to open' (cf. Sk. *udghāṭana* 'id.'), 39. uḍi- 'to rub' (Korku *ureḍ-* 'id.'), 40. uman 'to measure' (Korku), 41. uri- 'to kindle', 42. uṛa- 'to rise' (cf. Hi. *uṭh-* 'id.'), 43. ulṭa- 'to fall', 44. eger- 'to remove', 45. eŋger 'burning charcoal', 'fire' (Sk. aŋgāra 'id.'), 46. eṭe, eṭey 'he', 'that person', 47. edŭgo 'fly' (Korku *ruku*, Par. *aroi*, Gad. *uroy*, Mu. *roko*, Semang *roai*), 48. er- (iyr- 'to go' (Par. *iai-*, So. iy, yir 'id.'). 49. ocol- 'to lift', 50. oṭi 'that', 51. oṭṭi- 'to pull out' (cf. Ta. *oṭi* 'break off', etc.; see EMENEAU, *ibid.*, p. 227, No. 619), 52. oḍov 'buffalo', 53. oyja- (oyjakama-) 'to carry on head' (Korku), 54. oro millet' (Korku), 55. orṭa- 'to return', 56. orṭak- 'to be lost', 57. ovāri 'son's wife', 'younger brother's wife' (cf. Hi. b*ouhāri* 'id.'), 58. *ōṭho* 'chin' (Sk. *oṣṭha* 'id.'), 59. ōra 'air', 60. ōla- 'to be wet', 61. ōlakama- 'to make wet', 62. ōhan 'mortar', 63. kakheyŋ- 'to comb hair', 64. kaka 'mother's younger sister's husband', 'father's sister's husband' 'father's younger brother', 65. kaki 'father's younger brother's wife', 66. kakri 'cucumber', 'name of a Nahāl clan', 67. kaggo 'mouth', 68. kajar 'top of something', 69. kaṭan- 'to be silent (Korku), 70. kaṭṭo- (koṭṭo-) 'to beat' (cf. Mu. kuṭao 'id.'; may be a Drav. word: Ta. Ma. Ka. *koṭṭu* 'id.', 71. kaṭham 'tortoise (Korku.; East Beng. *kaṭha* 'id.'), 72. kaṭhla 'armpit' (Korku), 73. kanḍe 'tuber' (Korku; Hi. *kānḍā* 'id.'), 74. kapatiŋ- 'to tremble' (Hi. *kā̃pnā* 'id.'; the particle *-tin*, *-tiñ* is also used in Korku and some other Kolarian speeches to verbalise loan-words), 75. kapor 'winnowing basket', 76. kaplij' 'butterfly' (Korku), 77. kama- 'to do' (Korku; Hi. *kām* 'work'), 78. karchi pitcher' (cf. Sk. *kalasi* 'id.'), 79. karyom 'elder brother's wife', 80. kalṭo 'a Nahāl person' (there was a tribe in ancient India called *Karkaṭaka*), 81. kalaṭṭel 'wife's elder brother', 'his wife', 82. kānṭi 'for the purpose of', 83. kāmo 'work' (Hi. *kām* 'id.'), 84. kāv 'flesh', 85. kāvra 'crow' (Korku), 86. kāllen 'egg', 87. kiṭa- 'to winnow' (may be Dravidian), 88. kiyam 'tomorrow' (cf. Mu. *miaŋ* 'day after tomorrow'), 89. kuguso, kuguchyo 'hair', 90. kupra 'cloth' (Hi. *kəpṛa* 'id.'), 91. kuba- 'to be intoxicated' 92. kura 'unripe', 93. kui 'water well' (Korku; Sk. *kūpa* 'id.'), 94. kūḍu 'bamboo door', 95. keṭṭo-kama- 'to extinguish fire', 96. keḍa- 'to be felt' (?), 97. kepa 'louse', 98. kerchi- 'to itch' 'scratch' (cf. Hi. *khəjulānā* 'to itch'), 99. kelli 'cow calf' (Korku),

100. kokõy 'ant', 101. kokhor 'fowl' 102. kocakama- 'to bend' (tr.), 103. koṭṭu 'to pound' (cf. Hi. *kūṭnā* 'id.'), 104. koṭṭo (see *kaṭṭo-*), 105. koṭra (see *niḍirtaŋ koṭra*), 106. kobḍur (Korku; cf. Hi. *kəbutər* 'id.'), 107. kon, kom 'from', 108. kō- 'to bring', 109. kōgo 'snake', 110. kōr- 'to take away', 111. kōl 'woman' 'wife' (cf. Kharia *konsel,* Mu. kuṛi 'id.'), 112. kolya 'fuel' 'a Nahāl clan' (Hi. *kōylā* 'charcoal'), 113. khanḍa 'shoulder' (Sk. *skandha* 'id.'), 114. khanḍa- 'to carry on shoulder', 115. khara 'field', 116. kharuka 'many (animate)', 117. khuri 'leg' (cf. Sk. *khura* 'hoof'; Drav. *kal* 'leg'), 118. kheda- 'to drive cart' (Korku; East Beng. khæda- 'to drive'), 119. kherikama- 'to pull', 120. kheriyan 'threshing floor' (Ma. *khəlihān*; Sk. *khala* 'id.'; most probably Drav. loan; see EMENEAU *ibid.*, p. 201, vocable No. 339 *kalave*), 121. khobo 'much' (Hi. *khūb* 'id.'), 122. gaḍao- 'to bury' (Hi. *gāṛnā* 'id.'), 123. gaḍri 'ass' (Sk. *gardabha* 'id.'), 124. garḍan- 'neck' (Hi. *gərdān* 'id.'), 125. gāṛa 'cart' (Hi), 126 giṭa 'younger brother or sister' 'wife's younger brother's wife', etc., 127. gullu 'name of my Nahāli informant', 128. geri 'fishing hook', 129. goṭhi 'clan' (Sk. *gōṣṭhī* 'id.'), 130. gon 'with (associative)', cf. -kon, 131. gora kelli 'male calf', 132. golakama- 'to heap', 133. golga 'ear-wox', 134. ghaṭa- 'to search' (Korku), 135. ghām 'sunshine' (Korku; Hi.), 136. ghuṭari 'deer', 137. ghūrka ed- 'to go for defeacation' 138. chaka- 'to ascend' 'climb up', 139. cakhakama- 'to make to climb', 140. cakhaw- 'to sweep', 141. cacakkama- 'to heat' (cf. Korku *caṭa* 'hot'), 142. cacũko 'hot', 143. cana 'dance', (cf. Hi. *nācā* 'id.'), 144. cana- 'to dance', 145. carkaḍ 'waist', 146. carko 'black-faced monkey', 147. cago 'stone' (cf. Mu. *ciḍgi* 'id.'), 148. cāṭo 'hunger', 149. cāṭo paṭo- 'to be hungry' 'lit. hunger to come', 150. cān 'fish', 151. cāvg- 'to be afraid', 152. cikal, sikal 'earth' (cf. Sk. *cikilah* 'mud' 'mire', Old Beng.: *cikhila* 'id.'), 153. cigam 'ear', 154. cicca 'tamarind' 'a Korku clan' (Korku), 155. cuṭṭi- 'to pound' (see *koṭṭu-*), 156. ceki- 'to hold' 'arrest' 'catch' (cf. Hi. Ma. *chēk-* 'id.'), 157. cekoṭo 'axe', 158. ceyni 'previously', 159. cerk- 'to fall', 160. cerkokama- 'to make to fall', 161. cergo- 'to run', 162. cokob 'leaf of tree' 'a clan' (Korku, San. Mu., Nahāl, etc. *sakom* 'leaf'), 163. coggom 'pig' (Korku *sukri,* San. Mu. *sukri,* Sa. *kəmbun,* Par. *konmon*; Orang *kumokn* 'id.'; Sk. *śūkara* 'id.'), 164. copo 'salt' (a Drav. word; Pj. *cup* 'id.'; for othe etymas see EMENEAU *ibid.* p. 243, vocable 870), 165. *corṭo* 'blood', 166. cōn 'nose', 167. cōr 'thief' (Hi. etc.), 168. cyō- 'to urinate', 169. cyōkama- to make to urinate', 170. chāti 'chest' (Korku; Hi.), 171. chikār 'hunt' (Hi. *sikār,* etc., 'id.'), 172. chiḍu 'wine' (Korku *siḍu*; Sk. *sīdhu* 'id.'), 173. chim(n)- 'to sew' (cf. Sk. *siv-* 'id.'), 174. chunḍuku 'box' (Hi. *sənduk* 'id.'), 175. chũi 'needle' (Hi. *sūi* 'id.', 176. che 'yesterday' (cf. Kur. *cho*; Sk. *hyah* 'id.'), 177. cheri 'goat' (Korku *siri*; cf. Sk. *chāgala,* Beng. *cheli* 'id.'), 178. chokra 'bread' (Korku *sokra* 'id.'), 179. jappo 'water', 180. jappo baṭam- 'to be thirsty', 181. jambu 'blackberry' 'a Nahāl clan' (Sk. *jambu* 'id.'), 182. jara 'fever' (Hi. *jārā bukhār* 'ma-

larial fever'), 183. jaran 'crab', 184. jari 'root' (Korku; Hi. jəṛ. 'id.'), 185. jalū- 'to descend', 186. jalū kama- 'to make to descend', 187. jaldi 'quickly' (Hi.), 188. jiki 'eye', 189. jiki kapri 'eye-brow', 190. jiki yā̃to 'tears', 191. jiloguij' 'earthworm' (Korku *jilogoḍ'* 'id.'), 192. junu 'broom' (Korku; Mu. *jono,* Sa. *jənon,* Par. *juno* 'id.'), 193. jūḍ 'bamboo' (cf. Korku, etc. *māḍ* 'id.'), 194. jere- 'to remain', 195. jō 'I' (cf. Burushaski je, ja, Pasto *z*ᵃ, Newari *ji* 'id.'), 196. joppo, jappo 'water', 'a Nahāl clan', 197. jhuri 'swing' (Hi. etc. *jhula* 'id.'), 198. ṭarsya 'kind of animal called in Ma. etc. *taṛas,* 199. ṭār- 'to throw' (cf. Hi. *ḍālnā*), 200. ṭugiṭi 'ripe' (past participle), 201. ṭevre 'lip', 202. ṭyēko (ṭēku) 'we two', 203. ṭiye- (ṭē-) 'to eat' 'to chew' (may be Drav.; Ta. *tiṉ* 'id.'; for other etymas see Emeneau *ibid.,* p. 247, vocable 921), 204. ṭē̃ya 'wife's brother or sister', 205. ṭembriya 'tiger', 206. ṭōṭa 'maize' 'a Nahāl clan' (cf. Hi. *bhuṭṭa*), 207. ṭhagatiokama- 'to deceive' (Korku; Hi. *ṭhəgānā* 'id.'), 208. ṭhuk- 'to spit' (Hi. *thūknā* 'id.'), 209. ṭhekri 'forehead', 210. thenḍey 'moon', 211. ḍaḍi 'beard' (Korku; Hi. *dāṛhī* 'id.'), 212. *ḍaogo* 'branch of tree' (Korku; cf. Hi. *ḍāo* 'big stick'), 213. ḍanḍo 'upper arm' (Korku), 214. ḍay, ḍai 'elder brother' (any ṣenior man not much older than the speaker'), 215. ḍia, dia, 'day' (Korku; Sk. *divā* 'id.'), 216. ḍin, din 'day' (Hi. etc.), 217. ḍinoka 'daily', 218. ḍukri may 'father's sister', 219. ḍugi 'red-faced monkey', 220. ḍuḍ, dud 'milk' (Beng. etc.), 221. ḍeḍḍa 'frog' (Korku), 222. ḍelen- 'to drink', 223. ḍeleokama- 'to make to drink', 224. ḍevta 'Sun' (Sk. *devatā* 'god'), 225. ḍo 'and' (Korku; Kha. Mu. *oṛo* 'id.'), 226. ḍoogor 'forest' (Korku, Ma. etc.), 227. ḍoba 'bull' (Korku), 228. ḍooga 'a variety of ant of sig size', 229. ḍhapri 'bank of river', 'a Nahāl clan' (Korku), 230. ḍhulla 'dust' (Sk. *dhūli* 'id.'), 231. ḍhor 'cow', 232. tanḍur 'rice' 'paddy' (Sk. *tanḍula* 'rice'), 233. dhava 'distant', 234. nakko 'nail of finger' (Sk. *nakha* 'id.'), 235. nāogar 'plough' (occurs in most Indian speeches), 236. nāpyom 'mother-in-law' 'husband's, elder sister' 'wife's elder brother's wife', 237. nāko 'you two' (see *nē*), 238. nāo, nān 'whaṭ' (may be Drav.; cf. Pj. *nāo* 'why', *nāto* 'what'), 239. nāni 'who', 240. nāṛa 'adam's apple' (Korku *nāṛa,* 'id.'), 241. nāy 'dog' (Drav. word; Ta. *nāy;* for other etymas see *The Parji Language* by T. Burrow and S. Bhattacharya, p. 178. *netta*), 242. nālku, nālo 'four' (Drav. word; see Emeneau *ibid.,* p. 222, vocable 566), 243. nāvay 'why', 244. nitto- 'to enter', 245. niḍir 'white ant' (Korku *nindir* 'id.'), 246. niḍirtao koṭra 'inside of anthill', 247. nē 'thou' (Drav. word, see Emeneau *ibid.,* p. 225, vocable 601), 248. pakin 'peacock' (cf. Beng. *pekhɔ̃m* 'peacock's tail'), 249. pakoṭo 'bone', 250. pago 'tail', 251. paṭar- 'to dry (intr.)'; paṭarkama- 'to dry something', 252. paḍa- 'to kill', 253. parayn 'river', 254. parka 'all', 255. palco 'son', 256. paṭ-, piy- 'to come', 257. paroo 'bank of river' (cf. Sk. *pāram* 'id.'), 258. pala 'leaf' (Korku), 259. pasi-ki 'near' (Hi. *pās*), 260. pā̃co 'five' (Hi. etc. *pā̃c* 'id.'), 261. pi- (pa-) 'to come', 262. pirju 'daughter' (see *palco*), 263. puri- 'to send', 264. puch- 'to wipe away' (Hi.

etc. *pōch-* 'id.'), 265. pejikoemkama- 'to drive away', 266. peṭe- 'to sit', 267. peṭekama- 'to make to sit', 268. petek- 'to tear (intr.)', 269. petekkama- 'to tear something', 270. penḍri 'shin of leg', 271. pē̃y 'head', 272. poyye 'bird', 273. popo 'belly', 274. phuphu 'father's younger sister' (Hi. etc.), 275. phejer 'morning' (Hi. etc.), 276. phor 'fruit' 'mango' (Sk. *phala* 'id.'), 277. bakān- 'to leave' 'release', 278. backari 'child' (Hi. etc. *bacca* 'id.'), 279. baṭam- (see *jappo baṭam-*), 280. baṭuko 'mango', 281. badṛa 'sky' (Hi. etc. *bādəl* 'id.'), 282. baba 'father's elder brother' 'father's sister's husband' (Beng. *baba* 'father'), 283. bai 'elder sister', 284. bachye 'younger', 285. bay 'today', 286. bā, eba 'father', 287. baṭe, bāṭe 'now', 288. barḍo 'sickle', 289. bāro- 'to sing' (Drav. word ; Ta. *pāṭu* 'id.'; see EMENEAU *ibid.*, p. 230, vocable 652), 290. bi 'also' (Korku ; Hi. *bhī* 'id.'), 291. biṭil 'sand' (Korku ; Mu. giṭil 'id.'), 292. biḍi 'one (f.n.)' (Mu. *miaḍ,* Par. *boi,* Sa. *miḍ,* San. *mit,* Korku *mia* 'one'), 293. biḍum 'one (m.)', 294. biya 'village', 295. birṭom 'husband's elder brother' 'wife's elder sister' 'father-in-law', 296. bī- 'to rise' 'sun to rise' 'to come out', 297. bīkama- 'to turn out', 298. buḍu- 'sun, moon to set' (cf. Hi. *būṛna* 'id.'), 299. bumli 'navel' (Korku ; Mu. *buṭi.* San. *buka* 'id..'), 300. bekki- 'to reap', 301. beṭe 'not', 302. beṭṭo- 'to die', 303. beri- 'to cut wood', 304. berko 'cat', 305. boko, bokko 'arm', 306. bokki- 'to tie something', 307. bokko minjar 'palm of hand', 308. boṭor 'hare', 309. bommoki 'brother' (dl.), 310. bō̃y 'grass', 'a Nahāl clan', 'fodder', 311. bologo 'bear' (Sk. *bhalluka* 'id.'), 312. bhaga 'big' 'older', 313. bhaga- 'to grow', 314. bhaga day 'elder brother', 315. bhaga may 'father's elder brother's wife' 'mother's elder sister', 316. bhavri 'back of the body', 317. bhanja 'sister's son' (Hi.), 318. bhilla 'kite' (Korku), 319. bheriya- 'to fill (intr.)' (Hi. etc. *bhar-* 'id.'), 320. bheriyakama- 'to fill (tr.)', 321. ma- 'to give', 322. makan 'but' 'even then' (Korku ; San. *mankhan* 'id.'), 323. maŋgar 'crocodile' (Korku ; Hi *məgər* 'id.'), 324. maikko 'bee', 325. mancho 'man' pl. manṭa (cf. Sk. *manuṣya,* etc. 'id.'), 326. manḍi- 'to speak' (Korku), 327. mavsi 'mother's younger sister' (Hi.), 328. māṭo 'thigh', 329. mānḍu, mānḍo 'rain', 330. mā̃ney 'we (pl.)', 331. māma 'mother's brother' 'father's younger sister's husband', 332. māmi 'mother's brother's wife', 333. māy 'mother' (Hi. *māyī* 'id.'), 334. māv 'horse', 335. miŋgay 'where', 336. mijar 'inside' (see *kajar*), 337. minḍi 'evening' 'night', 338. mīyan 'how much', 339. murkiṭij' 'mosquito', 340. meur 'anthill', 341. menge 'tooth' 'jaw', 342. mer- 'to play', 343. mera 'near' (Korku), 344. merokama- 'to make to play', 345. mokhne 'elbow' (knee ?), 346. mochor 'pestle' (Sk. *muṣala* 'id.'), 347. monḍa 'heel', 348. mōṭh, mōṭho 'three' (Drav. word ; see EMENEAU *ibid.*, p. 219, vocable 551), 349. yēpṭa 'honey', 350. rabanka 'cold' (Korku), 351. rabankama- 'to cool something' 352. rupya 'rupee' (Hi. etc.), 353. laŋka 'a god worshipped by the Nahāl in the month of *Phālguna* (Feb.-March). The Korku worship Rāvaṇa who, according Hindu mythology, is the King of *Laŋka*. In Korku speech *laŋka* means 'distant place'; e.g. *khaḍ laŋka* 'very

far off', 354. lãy 'tongue' (Korku *lāɒ*, Mu. San. Sa. *alaɒ*, Par. Gad. Khar. *lāɒ* 'id.'), 355. lā 'you (pl.)', 356. lāo- 'to burn', 357. lẽñjo- 'to draw water', 358. vorcho 'year' (Sk. *varṣa* 'id.'), 359. simburu 'rheum of nose' (Korku *simṛu, semṛu* 'id.'), 360. sīk- 'to learn' (Hi. *sīkhna* 'id.'), 361. sokṛa (see *chokra*), 362. soso (see *chocho*), 363. ha, han 'this' (Korku), 364. haru- 'to bite', 365. harḍo 'turmeric' (Hi. *hərdi*), 366. hāṭu 'market' (Sk. *haṭṭa* 'id.'), 367. hi, i 'this (dem.)', 368. hiṭini 'here', 369. hinki 'here', 370. hiyan 'this much', 371. hīm 'cold' (Sk. *hima* 'id.'), 372. heɒgen 'me', 373. heṭṭi, eṭṭhi 'elephant' (Sk. *hastī* 'id.'), 374. hey beṭela 'there is not', 375. here 'this (pron.)', 376. huṭiki 'there', 377. ho 'he', 378. honḍar 'rat', 379. holoy- 'to shake' (Hi. *hilānā* 'id.'), 380. howṭa (*hou* + pl. *ṭa*) 'they'.

20. We have made an attempt to show the Kolarian, Indo-Aryan and Dravidian elements in Nahāli vocabulary. Most of the Kolarian words found in this speech agree closely with Korku which unmistakably points out to the intimate connection between these two tongues. The next Kolarian language with which Nahāli has closer lexical parallels is Mundari, and not Santali. It is also interesting to note that the Kolarian words in Nahāli, on the whole, agree more with the western and northern Kolarian speeches, i.e. Korku and the speeches of the Kherwari group. The Nahāli words identified by us as Dravidian are not many. Most of them in phonetic details agree more with their cognates in the central Indian Drav. speeches. For example, Nahāli *copo* 'salt' agrees more with Pj. *cup*, Oll. Kol. Naik. Poya *sup*, Go. *sovar* 'id.', but in the south Ta. Ma. Ka. Tu. Te. Sav. have *uppu*, Ko. To. *up*, Koḍ. *uppi* 'id.'. The Indo-Aryan words found in Nahāli have greater agreements with their cognates in Hindī, Hindusthani and Marathi.

21. Our comparative study of Nahāli words is far from complete. But the main issue, I hope, has been made sufficiently clear that a large number of words of this speech cannot be called Kolarian, Indo-Aryan or Dravidian. The number of such words as shown in our list may be reduced as a result of further deliberations. But the present problem is that a large number of basic words in Nahāli denoting limbs of the body, important animals and articles of material culture, etc. are significantly aloof. Some scholars are therefore inclined to believe that Nahāli originally belonged to a different speech-family which is now extinct, and that these words are remnants of that ancient tongue. It has been posited further that the native elements in Nahāli represent the lost speech of the Bhil 'race'.

22. The problem of race and language in India has not yet been solved. The number of speech-families found in the mainland of this country is four. But the speakers of these languages are classified into different races the number of which is likely to exceed the above number. It is therefore quite plausible that a few more speech-families existed in Indian main-

land in the past. The high percentage of the unidentified elements in Nahāli leaves little doubt that the base of this speech belonged to a family which is now lost.

Abbreviations of names of Languages

Kolarian : KK. (Korku), San. (Santali), Mu. (Mundari), Jua. (Juang), Khar. (Khaṛia), Sa. (Savara, Saora), Gad. (Gadba), Par. (Parengi), Ḍiḍ. (Ḍiḍey), Bon. (Bonḍa), Nah. (Nahāli), etc. Items from Semang, Sakai, Orang, etc. of Malaya Peninsula have also been quoted.

Dravidian : Ta. (Tamil), Te. (Telugu), Ma. (Malayalam), Ka. (Kannada), Tu. (Tulu), To. (Toda), Ko. (Kota), Bad. (Badaga), Koḍ. (Koḍagu), Go. (Gondi), Kol. (Kolami), Naik. (Naiki), Pj. (Parji), Oll. (Ollari), Kon. (Konḍa), Kui (Kui), Kur. (Kuṛukh), Brah. (Brahui), Drav. (Dravidian), etc.

Indo-Aryan : Sk. (Sanskrit), Pkt. (Prakrit), Hi (Hindī, Hindusthani, Urdu), Ma. (Marathi), Beng. (Bengali), etc.

A WĀRLI TALE

By

Gajanan M. PATIL, *Visnagar.*

The following is the text of a native folk-story recorded from the Wārli informant, Shri. Sonyaji Gopal SHINGDE, a trained primary Head-master from Chinchani (Dist. Thana), on 10th June, 1956, when he attended the Summer School of Linguistics at Poona as an informant.

The Wārlis belong to the tribal races of Thana District. They live mostly in the interior places away from the cities and towns, and carry on their simple life by agriculture, forest cutting and manual labour in towns. Even in towns they keep themselves aloof from other people and carefully protect their customs and culture.

The story exemplifies the native colloquialisms, and wonderful similarity in linguistic characteristics with standard Marathi of which their speech is a dialect. The dialect has the usual grammatical forms viz., Noun, Pronoun, Adjective, Adverb and Verb. The Nouns have inflections for cases and number and the verbs have inflections for tenses, moods, genders and number. The following morphemes of the case inflections should be noted :—

[A] (i) Nom. Sing bhakər (f.)
wagh (m.)
*kombɖə (n.)
*jambhəy (f.)

(ii) Obl. Sing. — ek > ek ~ eke; *dusra > ɖusre; *ʈoplã > ʈoplya-; *mən > məna-; */ghər/ > /ghəra-/, /pani/ > /panya/-; /to/ (pronoun) > /tya/- ~ /te/-; /mi/ (pronoun) > /mā/; */man/ > /mani-/; */khiɳ/ > /khiɳɖi-/; /dis/ > /disa-/; /waʈ/ > /waʈe-/;

(iii) ✓ Nom. pl. = √–ə· ~ √–i ~ √–a ~ √ #
cf. /ɖalə·/; /kombɖi/, /bhakri/; /jambhəya/; /wagh/.

(iv) ✓ Oblique pl. = ✓ -an- cf. */d̦hor/ > /d̦horan-/

(v) ✓ Instrumental = √–na ~ √–n
√–n after –o and –a endings.
cf. /wad̦hghon/; /tyan/

√–na after –i and consonantal endings.
cf. /porina/, /jəwayna/.

(vi) ✓ ablative = ✓–ʃi-
cf. /ghərapai̯ʃi/ /məgharʃi/

(vii) ✓ locative = √–t ∼ √–ĩ ∼ √ –ã ∼ √ #.
cf. /mənat/; /kaʈhĩ/; /ghərã/; /dis/.

(viii) ✓ (prep.)–c — √ c ∼ √ -uc
vowel endings take √–c = cf. /Səkalic/; /bərec/,
consonantal endings take √–uc = cf. /ekuc/; /pharuc/; /ye. . .enuc/.

[B] The conjugational tenses, etc.:— We come across the usual three tenses, the present, the past and the future. The plu-perfect and the potential forms of √hona, "to be" are noteworthy.

The present tense :—1st person :— /ahẽ/, /jãy/,
2nd per. :—/jatãy/
3rd per. :—/ahe/, /kərə·/, /saŋgə·/.

The past tense :—3rd per. :— /ala/, /ali/, /bandhli/, /bəsla/, /dila/, /dili/, /gela/, /geli/, /sod̦lã/, /wisərli/, /pilã/, /bhujlya/, etc., etc.

The verb has the gender and the number of the subject.

The future tense :—/ghen/, /yen/, /khan/, /hoyl/, /pəd̦əl/.

The 1st per. sing. forms in st. Mar. would be /ghein/, /yein/, /khain/ instead the forms given here. These forms are homophonemic with the gerunds of the same roots. Cf. /pori ali pani ghen/.

The pluperfect :— These forms are found in /didhel/, /nidhel/, /anel/, /ʈhewel/, /naŋgel/, etc. Wonderful similarity of these forms is noticed with the similar Gujarati forms. Cf. /apel/ "given", /didhel/ "given", etc. These forms may be used as participles in the sentence.

The potential forms are noticed in the auxiliary roots of the composite verbs. The auxiliary root √hona, "to be" has an allomorphic base √əsna in St. Mar. The Wārli dialect does not use the latter one and instead of the St. Marathi forms */wisərli əsawi/, */zala əsawa/, */kapla əsawa/ and */zali əsawi/, it uses /wisərli howi/, /zala howa/, /kapla howa/ and /zali howi/.

The imperative forms, apart from the St. Mar. type, are formulated by an additional bound morpheme /-jos/ after the usual imp. forms of 2nd person. Cf. /saŋga/; /raha/; /jayjos/; /saŋjos/.

The Gerunds are usually formed by addition of bound inflexional morpheme ✓-un to the bases of all roots excepting those monosyllabic roots with vowel endings. Cf. √saŋgana > /saŋgun/; √rəhna > /rəhun/; √wațna > /wațun/; √bəsna > /bəsun/; /d̦hərun/, /d̦həkun/, etc., and √ghena > /ghen/; √yena > /yen/ [(yenuc)]; √jana > /jan/ where the ✓-n only to the oblique base.

The infinitive of purpose are formed by addition of ✓-ya ~ ✓-aya to the bases either ending in vowels or consonants. The meaning is similar to the dative case of the nouns. Cf. /sangaya lagla/ and */kamala lagla/ or /panyala geli/ and */sangaya gela/. The bound morpheme ✓-sațhi is sometimes added. Cf. /khayasațhi/, /jayasațhi/.

The peculiar causal formation is found in the sentence (15). /porina bes basla jewəwla/.

The indeclinables including prepositions are found as /na/; /hũ/; /-wər/; /-c/; /kyā/; /ata/; /mənga/; /ikdə·/; /əthə̄/; /əgdi/; /əsā/; /od̦hyat/; /-sațhi/, etc.

The adjectives /moțha/ ~ /moțe/, /bes/; the numerals /ek/, /don/ are available in the story as also the pronouns /mi/; /tumhi/; /to/ [obl. sing. /te/, /tya/]; /ti/; /eyo/ are found.

[C] THE TEXT

(1) Ek wad̦hgho hota. (2) tya-ci eku-c pori. (3) ti-ho phar dur
One old Wārli was. His one-only daughter. She-also very far

pərnun didhel. (4) tya-ce ghera-paĩ/i ek disa-ci bhũĩ od̦he dur
having married given. he-of house-near-from one day- land so much far

didhel. (5) ek dis wad̦hghoce mən-at alā jawā pori-ce ghərā
given. One day old Wārli-of mind-in came let me go daughter-'s house

pahna. (6) khəbər hũ ghen na don dis pahna hũ rəhun
guest. News also I will take and two days guest also having stayed

yen. (7) dusre dis wad̦hgho moțe pəhət-ratiwər uțhla. (8) don
I will come. Second day old-Wārli very dawn-night-at got up. Two

naglicya bhakri bhujlya. (9) pora-la kha-ya-sațhi na ma-la-w nahari
Ragi-of bread baked. Child-to eating-for and me-to-also breakfast

hoyl. (10) bajar-cə· d̦alə· anel te ghetlə·. (11) be·s gați
will be. market-of grams were brought they were taken. fine knot

bandh-li na pori-kəd̦ə· jaya-sațhi nighala. (12) jatã-jatã dupar zali,
was-tied and daughter-to going-for started. Going-going mid-day happened,

nimbər phar zala. (13) tə̃y to nəi-ce kațhĩ wiswaya bəsla.
heat of the sun very happened. There he river-of on the banks for rest sat.

(14) caukhən̦ khan bhakər khali, pani pilã; na məngã
quarter (about morsel) bread (was) eaten, water (was) drunk, and then

ʃila zala təsã wațe-la lagla. (15) San-ce d̦horan-ce məghar ʃic
cool was then way-on started. evening-at cattle-of behind-only

pori-kəd̦ə· jan pohõcla. (16) pori-na bes bas-la jewəwla.
daughter-to having gone reached. Daughter-by fine father to was fed.

(17) tyanhə bhakər anel ti pori-ce porã-la
By him also bread was brought that daughter-of children-to

wațun dili. (18) d̦alə· waț-un dilə·.
having distributed (was) given. Grams having distributed (were) given.

(19) Səkalic nihari keli. (20) Jə̃wãy wad̦hghola saŋgaya
Morning-in breakfast (was) made. Son-in-law old-Wārli–to telling

lagla. (21) Karə· mama, aj tumhi jatãy; jat howa tə jayjos.
started. What-oh mama, today you are going (if) going are then; go.

(22) mi tə̃ kam ahe tikd̦ə· jaycõ ahẽ. (23) əsã saŋgun to tə ghərat ʃi
I (for one) work is there going am. Thus having told he (really) house-in-from

gela. (24) pori uțhli ti panyala geli. (25) Wad̦hgho mənat kərə·.
went. Daughter got up she water-for went. Old-Wārli mind-in does.

(26) porina biji kombd̦i sod̦lĩ na yã țoplya-khəl-cã kyã sod̦lã nahi.
daughter-by other fowls (were) left and this basket-beneath-of why left not.

(27) Wisərli howi. (28) Wad̦hgho țoplã ukawun naŋgə· tə̃v
(She) forgotten might have. Old Wārli basket having lifted sees (and what)

țekhəl bhəla moțha mor dhərun anel. (29) Wad̦hgho
that-beneath very big peacock having caught was brought. Old Wārli

cərəkla. (30) təyə̃c jə̃wãy mala jaya saŋgə· ho. (31) mor
(was) surprised. (This is why) son-in-law me-to for-going tells. peacock

khaya wața pəd̦əl to. (32) bə·rã. (33) Od̦hyat pori ali pani
for eating share will fall. Alright. Just then daughter came water

ghen. (34) Wad̦hgho porila saŋgə·. (35) Bay, mi tə̃ ata
having taken. Old Wārli daughter-to tells. Daughter I (really) now

ghərā jāy. (36) ǰəwāyala saŋjos gelā əsā. (37) Wadhghon
home-to am going. Son-in-law-to tell I went thus (that (ind.)) Old Wārli-by

həluhəlu jaya cal manli. (38) pori-ce ghəra-pai-ʃi bəre-c
slowly for going walk placed. Daughter-of house-near-from much-too

dur gela na mani-t-le eke zada-khəl be·s sahi naŋg-un bəsla.
far went and pasture-land-in-of one tree-beneath fine shade having seen sat.

(39) pəkki ni·j kadhli. (40) naŋgər sutnica wəkhət zala
Too-much sleep (was) taken. Plough unyoking-of time been

howa na uthla·. (41) Wičar kərə. (42) ata jə̃wāyna
might have and got up. (He) thought does. Now son-in-law-by

mor kapla howa, bhaji·v zali howi. (43) Moraci bhaji
peacock cut might have, curry-to been might have. Peacock-of curry

khan təyə̃c jāy. (44) ikdə· jə̃whāsna moraci bhaji kərayci
I shall eat then only I go. Here son-in-law-by peacock-of curry making-of

təyari keli. (45) Odhyat Wadhgho pərət yenuc rəh^la. (46) pori
preparation made. Just then old Wārli again having come remained. Daghter

saŋgaya lagli, "ba kya alas." (47) əgə· kay
telling-for started, "father why have (you) come. Oh (daughter) what

saŋgū. (48) aj malə· khayjət hota. (49) te khindit bhəle motha
shall I tell. Today to-me about to eat was. (In) that pass very big

wagh mohorə· ala. (50) to jat nay, kay nay. (51) jambhəya det
tiger in front came. He going not, (anything) not. Yawnings giving

bəsun rəh^la. (52) manzewər pel kəraya lagla. (53) ərə· jə̃wāy,
having sat remained Me-on mark doing started. Oh son-in-law,

pharuc motha na to. (54) na əgdi raŋgə· (55) eyo tumhi mor
much-too big (really) he. And (very) near. This (by) you peacock

dhakun thewel odhe wag, na mi əthə̃. (56) məŋgā saŋga himmət hol
having covered kept thus far, and I here. Then tell courage will

kay pudhā jaya. (57) na himmət calə·. (58) əsā tə mi
(what) ahead to-go. Not courage (walks). (As a matter of fact) I

pha·r naŋgel wagh, pən əsa nahi naŋgla. (59) tə̃y mi pərət alā na".
many have seen tigers but such one not seen. Thus I back came (really)".

(60) "Alas tə athā rəha."
"You have come then now stay".

[D] Lexical notes :—

(1) wad̦hgho.—old Wārli. Cf. Skt. *"Vṛdhdhak < √ vṛdh." to grow; > √wad̦hn̦e (mar).

(2) ti-ho—she (really). Words like /ho/ (30), /tə/ (22), /to/ (31), /na/ (53), (59), /əsā tə/ (58), are the colloquialisms of the dialect.

(3) pərnum dena = to give in marriage.

(4) ek disaci bhũĩ od̦he dur—at a distance which would require one day's journey.
bhũĩ—land, earth, passage. (Cf. Skt. "bhumi").
od̦he—so much (cf. mar. evd̦hẽ).

(5) mənat yena—"to come in mind", "to strike", "to think".

(6) khəbər—"news";
hũ—"also", "too".

(7) mote pəhət ratiwər—"too early in the morning".

(8) nagli—the grain called as "Ragi".

(11) gați bandhli—"tied a nice bundle". (Cf. [mar.] gațh = knot).

(12) jatājatā—"as he was going" (repetitive form to show continuity).
dupar zali—"it was midday" (noon).
nimbər phar zala—"it was too hot".

(13) tə̃y—"there" cf. tə̃y = "therefore, thus". (59)
nəi—"river" (cf. [mar.] nədi).

(14) caukhən̦ khan—"about a quarter" (just to make the morse). This is purely colloquialism.
ʃila zala təsā—"then (when) it was cool" (in the evening).
Wațela lagna—"to start on the journey" (path).

(15) Sance d̦horance məghar ʃic = "in the evening just behind the cattle only".

(17) Wațun dẹna—"to distribute".

(22) Jaycõ ahẽ—"I am going". Jacõ is a peculiar form of the present participle. Cf. *Jayci ahe—"she is going".

(25) mənat kərna—"to think". Cf. (5) above. The constructions differ though the meaning conveyed is the same.

(28) țoplā (n.)—"basket".
naŋgna—"to see".
tə̃v—"then". Cf. [mar.] tõ in the phrase jõ....tõ.

(30) təyə̃c—"This is why". "It is for this reason." Cf. [mar.] təric.

(31) Wața pəd̦əl to—there will be an additional share. I know.

(32) The nasality and the vowel length have phonemic value in the dialect. Cf. /əsa/ "like this". /əsā/ "thus". */bərā/ (n.) "good"; /bə·rā/ "alright"!

(37) Cal man̦na = "to start, to be on foot".
(38) man (f.) — "pastureland outside the village."
(39) pəkki ni·j kad̦hli — "(he) had a good sleep".
(40) naŋgər suțn̦ica wəkhət — "the time of the unyoking the plough", (in the evening).
(45) pərət yenuc rəhla — "did come back".
(50) to jat nay kay nay — "nor was he going nor doing anything."
(51) "He sat yawning".
(52) pel kərna — "to keep watch on", "to mark on", "to concentrate upon".
(56) himm̃ət hona — "to have courage".
(57) na—"not" (negative particle). ✓na has three different meanings in this tale. (1) na = "and"; (2) na = assertive particle without any special meaning cf. (53); and (3) na = "not" negative as in present case.
himm̃ət calna — "to take up courage".
(9) & (19) /nahari/ & /nihari/ = "breakfast"
(60) /ata/ (35) & /athã/ = The distinction is due to male & female speech.

[E] Phonological notes :—

/o-/ < /ev-/ (mar.) cf. od̦hyat < evd̦hyat; od̦he < evd̦he.

/n/ is partially substituted in place of /n̦/ in St. Marathi, apart from its origin from other sources. Cf. */pan̦i/ (St. mar.) > /pani/; */pərn̦un/ (st. mar.) > /pərnun/;

/c/, /j/ & /z/ are mostly dental affricates except where they are followed by front vowels or /y/ or when they occur in Tatsama words from Skt. where they are palatals. Cf. /ekuc/; /aj/; /caukhən̦/; /jat/; /jaycõ/; /saŋjos/; /tyaci/; /naglicya/; /sance/ but /wičar/ (Sk.) = thought.

The active and passive voices are generally followed according to St. Marathi grammar; the construction in (16) is peculiar.

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